USER'S MANUAL

STAR 505R

Access Controller

ID TECK Co. Ltd.

Table of Contents

1. Important Safety Instructions 3
2. General 4
3. Features 4
4. Specification 5
5. Front Panel Description 6
6. Identifying Supplied Parts 6
7. Installation of the Product 7
8. Color Coded & Wiring Table 8
9. System Wiring for Typical Application 9
10. Wiring for Network 11
11. Functions 11
12. Operation 13
13. Basic settings 14
14. Setting Changes 19
15. Operating status indications 43
16. FCC Registration Information 44
17. Warranty and Service 45
18. Template 46

1. Important Safety Instructions

When using your STAR 505R, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons. In addition, the following safety guides should also be followed:

1. **Fully** read and understand all instructions and follow them completely.
2. **Follow** all warnings and instructions marked on the product.
3. **Do not** use liquid or aerosol cleaners. Use a damp cloth for cleaning. If necessary, use mild soap.
4. **Do not** use this product near water.
5. **Only** operate this product using the type of power source indicated. If you are not sure of the type of power supplied to your installation site, consult your dealer or local power company.
6. **Never** insert objects of any kind into the product or through the cabinet slots as they may touch voltage points and/or short circuit parts possibly resulting in fire or electric shock. Never spill liquid of any kind on the product.
7. **Never** disassemble this product by yourself; take the unit to a qualified service center whenever service or repair is required. Opening or removing the covers may expose you to dangerous voltages or other risks. Also, incorrect reassembly can cause electric shock when the unit is subsequently used.
8. **Unplug** this product from the Direct Current (DC) power source and refer to qualified service personnel under these conditions:
   a. When the power supply cord or plug is damaged or frayed.
   b. If liquid has been spilled on the product.
   c. If the product does not operate normally after following the operating instructions in this manual. Adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of other controls that are not covered by this manual may damage the unit and will often require extensive work by a qualified technician to restore normal operation.
   d. If the product exhibits a distinct change in performance.

2. General

The STAR505R is a highly advanced, intelligent single door controller with a dual 8bit microprocessor to meet the market requirement for a robust integrated solution for access control and time & attendance. It is designed for low cost as well as high security, convenience and reliability. This user friendly device allows you to register 500 ~ 10,000 ID numbers and it can keep 2,500 ~ 7,250 events. Number of ID & Event can be exchanged under the ratio of 2 to 1 which means every 500 users can be convert to 250 events. The event buffer is easily report and archive information to Excel or Access databases; and ultimately successfully manage all access control and time & attendance issues. With a built-in 4" inch RF reader and keypad for Personal Identification Numbers (PIN), the STAR505R offers up to two levels of ID verification. You can verify by prox. PIN or both and multiple verification levels can be custom programmed for each user or user group. Four independent input ports can be utilized for a wide variety of controls including exit buttons, door contacts, PIR sensors and fire detection equipment. Actions to be taken and time settings can be programmed with the front keypad or via the intuitive Windows based software program. The STAR505R can be used both as a stand-alone system and also be networked. All control setting values such as ID numbers, inputs/outputs, real-time clock, time schedules, and event transaction reports can be uploaded and/or downloaded to and from the host computer. The compact and contemporary unit is easily installed and programming requires no significant knowledge of access control or time & attendance. The Three LED indicator lights inform you of the systems operating status at real time and the digital display acts as a programming aid as well as a regulation time clock. By bundling the ultimate in high security access control and comprehensive employee management tools into a compact user friendly unit, the field proven STAR505R is the ideal solution for controlling entrances and ensuring complete employee accountability.

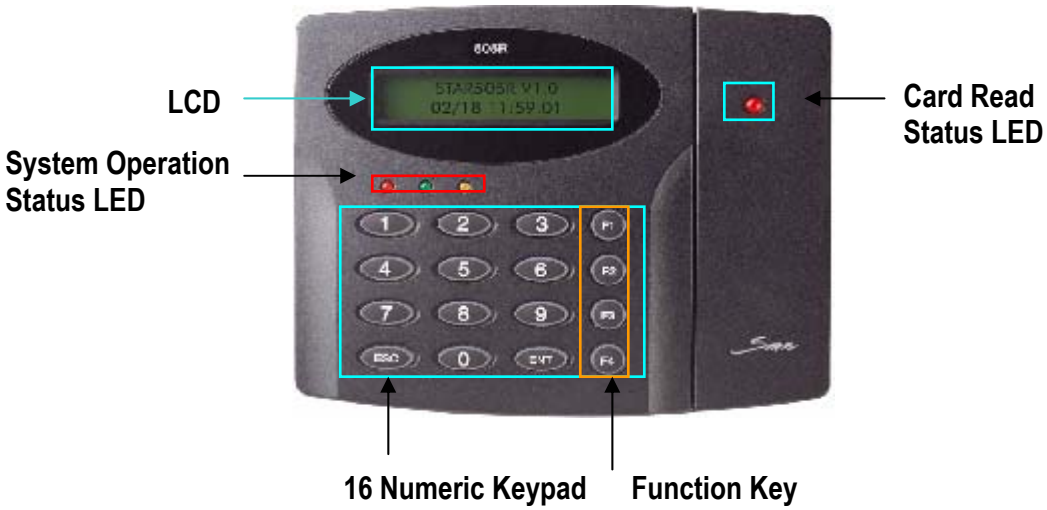
3. Features

- Single door controller for access control and time & attendance
- Built-in Proximity Reader with up to 4" of read range with IDC170 card
- Data memory programmable
  Card holder records -------- 500 to 10,000
  Off-line stored events ------ 7,250 to 2,500
- 4 independent input ports(Exit button, Door contact, Aux #1, Aux #2)
- 4 output ports including 2 Form-C Relays
- All setting values are user programmable from the keypad or from the application software
- Duress mode Operation
- Various Time Schedule Operation
- Door Lock and Unlock functions
- Door open by compulsion and Door open alarm
- Configurable for Normal operation
- RS-232 and RS-422 communication port for interfacing with the application software
- Address selectable up to 32ea
- Baud rate 4800, 9600(default), 19200bps
- 3 LEDs (red, green, and yellow) for system operation status
- 2line x 16ch, 65.6 x 13.8mm view area LCD

4. Specification

CPU	: Dual 8bit Microprocessor
Memory	: Program memory(64KB ROM) Data memory(128KB RAM : battery backup)
Power	: DC 12V/ 150mA max.
Proximity reader	: Built-in Proximity reader with up to 4" of read range with IDC 170 card
Card Holders/Event buffers	: Memory programmable for : Card holder records -------- 500 to 10,000 Off-line stored events ------ 7,250 to 2,500
Reader ports/Data format	: 1 External port, 1 Internal port / wiegand format
Input/Output	: 4 Inputs, max. rating at DC12V/20mA : 2 Relay outputs : DC12V~24V/2A max. : 2 TTL outputs : DC5V/20mA
Communication	: One RS-232 port and one RS-422 port 4800, 9600(default), 19200 bps Baud Rate Address selectable up to 32ea
Keypad	: 16 Numeric Keypad(back lighting)
LCD	: 1x LCD module, 2Lines x 16ch, 65.6 x 13,8mm view area
LED	: 3 LEDs (red, green, and yellow)
Operating environment range	: -35°C to +65°C, 10% to 90% Humidity
Mounting	: Wall mounted
Weight	: 400g
Dimensions	: 150mm(5.9 ") x120mm(4.72 ") x39.5mm(1.55 ")
Color	: Dark pearl gray
Material	: Polycarbonate
Format	: 26-bit Wiegand
Self diagnostic	: Yes
Reset	: Power on reset & watch dog timer
Certification	: UL-294 indoor and outdoor compliance, FCC Class A part 15 and CE

5. Front Panel Description



6. Identifying Supplied Parts

Please unpack and check the contents of the box.

Main Unit
(1)

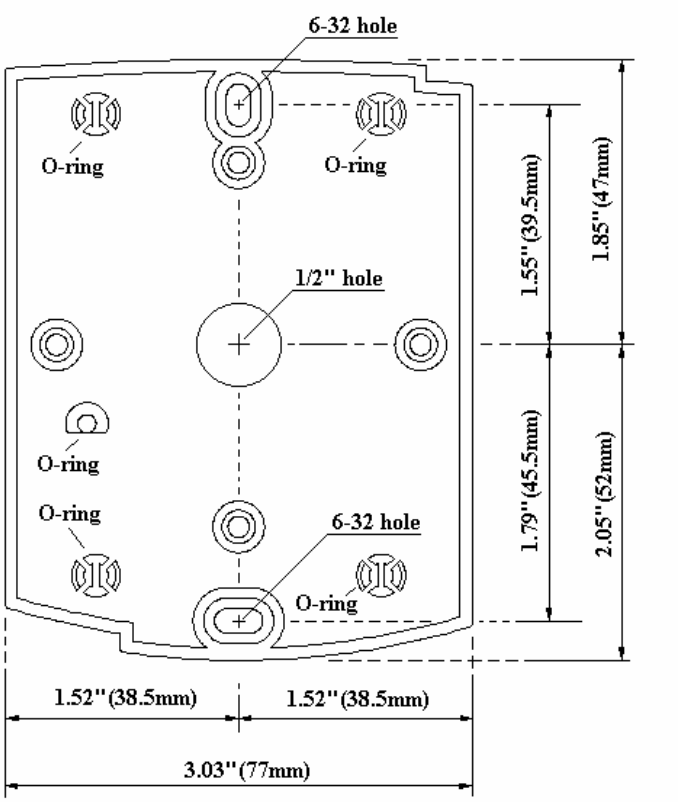
Wall Mount
(1)

O-Ring
(5)

Manual
(1)

7. Installation of the Product

7-1. Tear off page 46 and use the provided template to drill two 6-32 holes and one 1/2" hole on the proper location of the wall to mount the Wall Mount bracket as shown below.
(If the gang box is already installed on the wall then skip this step.)



7-2. Using 2 screws, install wall mount to the wall.

*** CAUTIONS ***

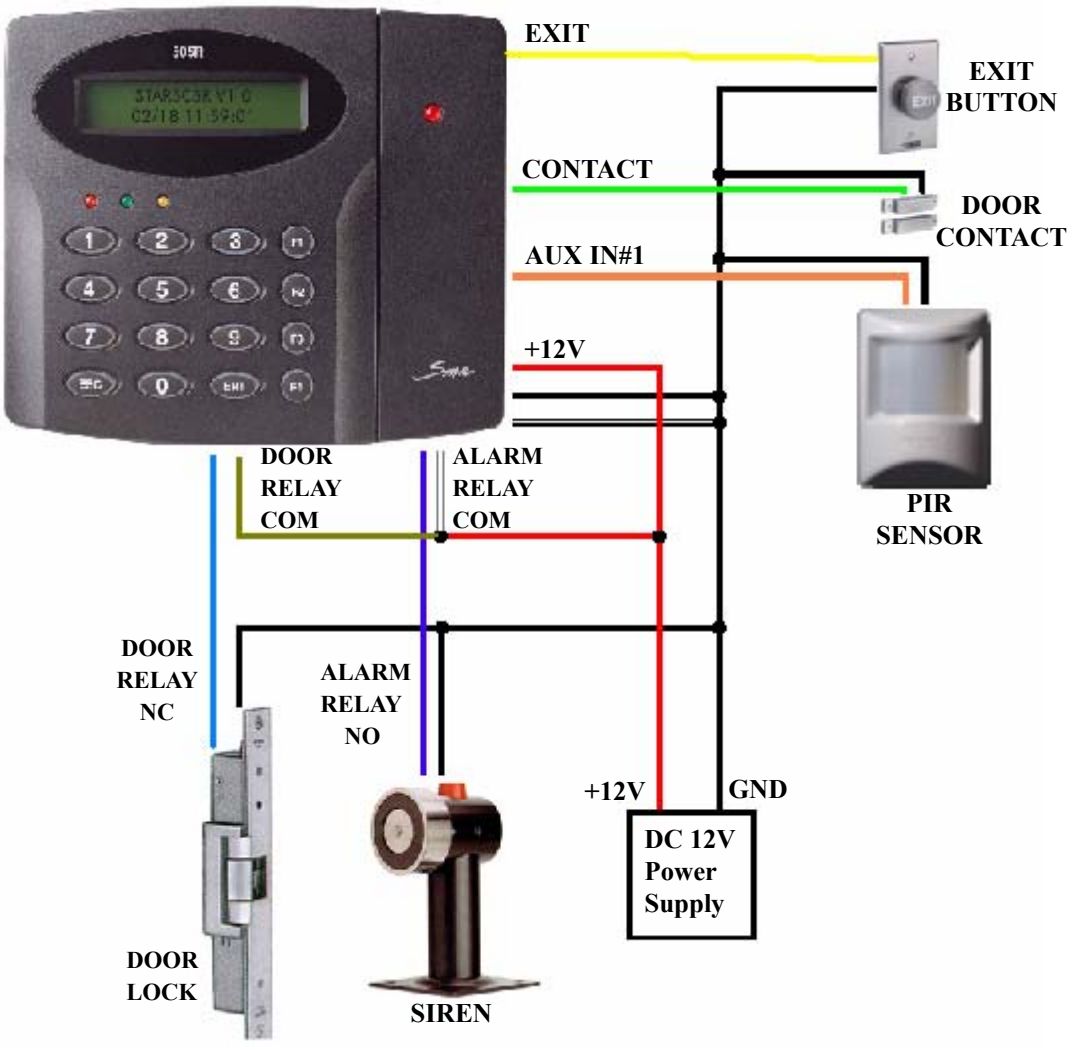
Before mounting the STAR 505R unit to the Wall Mount bracket, operational test of the unit should be completed, as the locking pins will lock the unit to the Wall Mount. Removing the unit from the Wall Mount bracket after they have been installed together may cause damages to the bracket and render its effectiveness.

7-3. Insert 5 O-rings to the wall mount as indicated, then route the cable of the main unit through the center hole and push the main unit to wall mount to lock the main unit and make sure that the main unit is locked with wall mount.

8. Color Coded & Wiring Table

I/O PORT NAME	SIGNAL NAME	WIRE COLOR
POWER		
Main Power (+12V)	+12V	Red wire
Power Ground	GND	Black wire
OUTPUT		
Door RELAY(COM)	COM(1)	Gray wire with Red stripe
Door RELAY(NC)	NC(1)	Blue wire with White stripe
Door RELAY(NO)	NO(1)	White wire with Red stripe
Alarm RELAY(COM)	COM(2)	White wire
Alarm RELAY(NC)	NC(2)	Purple wire with White stripe
Alarm RELAY(NO)	NO(2)	Purple wire
TTL Output1	TTL1	Orange wire with White stripe
TTL Output2	TTL2	Brown wire with White stripe
INPUT		
Exit Button	EXIT	Orange wire
Door Sensor	CONTACT	Yellow wire with Red stripe
Aux Input #1	IN#1	Green wire
Aux Input #2	IN#2	Green wire with White stripe
WIEGAND INPUT / OUTPUT		
Wiegand Data 0	DATA0	Pink wire
Wiegand Data 1	DATA1	Cyan wire
RS232 INTERFACE		
RS232-TX	TXD	Black wire with White stripe
RS232-RX	RXD	Red wire with White stripe
RS422 INTERFACE		
RS422-TX(-)	TXD(-)	yellow wire
RS422-TX(+)	TXD(+)	Grey wire
RS422-RX(-)	RXD(-)	Blue wire
RS422-RX(+)	RXD(+)	Brown wire

9. System Wiring for Typical Application



9-1. Power Connection

- Connect (+) wire of DC 12V power to Red wire
- Connect Power GND (-) wire of DC 12V to Black wire

9-2. Door Lock Connection

9-2-1 Connection of POWER FAIL SAFE: Door Lock

- Connect Door RELAY(COM), Grey/Red stripe wire to DC +12V (be sure that the existing power supply has enough capacity to support this accessory or upgrade to a sufficient one.)
- Connect (+) wire of Door Lock to Door RELAY (NC), Blue/White stripe wire of main unit.
- Connect (-) wire of Door Lock to Power GND (-) wire of main unit.

9-2-2 Connection of POWER FAIL SECURE: Door Lock

- Connect Door RELAY(COM), Grey/Red stripe wire to DC +12V (be sure that the existing power supply has enough capacity to support this accessory or upgrade to a sufficient one.)
- Connect (+) wire of Door Lock to Door RELAY(NO), White/Red stripe wire of main unit.
- Connect (-) wire of Door Lock to Power GND(-) wire of main unit.

9-3. Alarm Device Connection

- Connect Alarm RELAY(COM), White wire to DC +12V (be sure that the existing power supply has enough capacity to support this accessory or upgrade to a sufficient one.)
- Connect (+) wire of Alarm Device to Alarm RELAY(NO), Purple wire of main unit.
- Connect (-) wire of Alarm Device to Power GND(-) wire of main unit.

9-4. Exit Button Connection

- Connect one of the wires of Exit Button to Exit Button Input, Orange wire.
- Connect the other wire of Exit Button to Power GND (-) wire.

9-5. Door Contact Sensor Connection

- Connect Door Contact sensor (COM) wire to Door Contact Input, Yellow/Red stripe wire.
- Connect Door Contact sensor (NO) wire to Power GND (-) wire.

9-6. Auxiliary Input Device connection (Applied to AUX Input #1, #2)

- Connect one wire of the Auxiliary Input Device to the AUX Input wire.
(AUX Input #1: Green wire, AUX Input #2: Green/White stripe wire).
- Connect the other wire of Auxiliary Input Device to Power GND (-) wire.

9-7. Wiegand Input Connection From Another Compatible Wiegand Reader

- Connect (+) wire of Reader to DC +12V (be sure that the existing power supply has enough capacity to support this accessory or upgrade to a sufficient one.)
- Connect (-) wire of Reader to Power GND (-) wire.
- Connect Wiegand output DATA0 wire of the additional Reader to DATA0, Pink wire.
- Connect Wiegand output DATA1 wire of the additional Reader to DATA1, Cyan wire.

9-8. RS-232 Communication Port Connection

9-pin connector (COM Port, female) is required to connect serial communication RS-232 between Main Unit and Personal Computer.

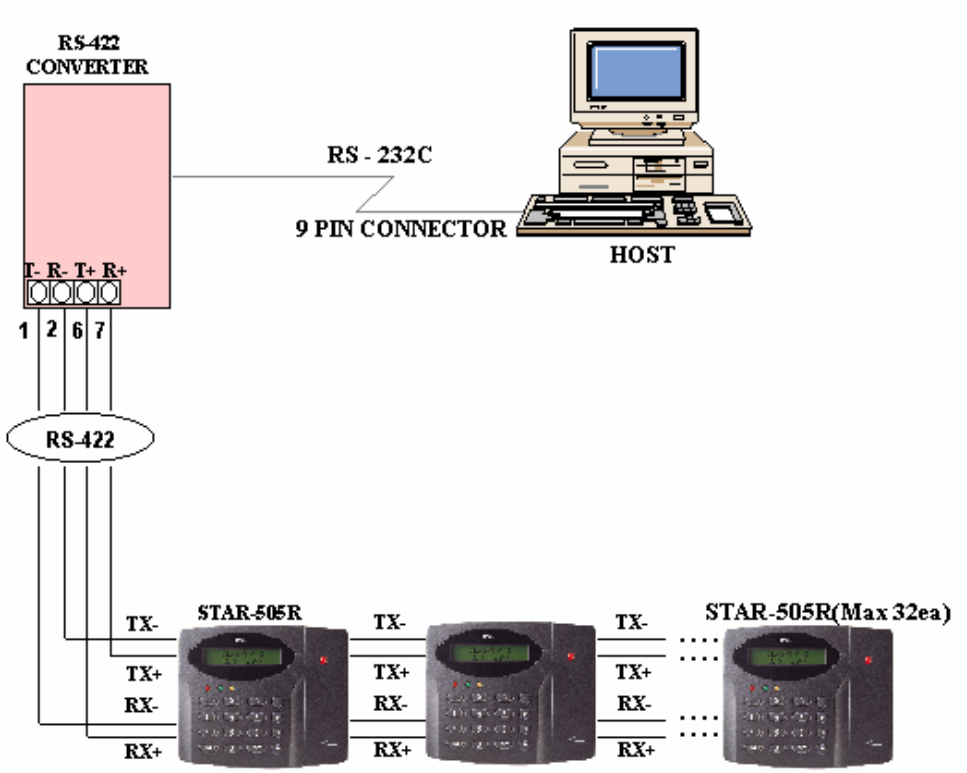
- Connect RS-232-TX, Black with white stripe of Main Unit to pin number 2 of 9-pin connector.
- Connect RS-232-RX, Red with white stripe of Main Unit to pin number 3 of 9-pin connector.
- Connect GND, black wire of Main Unit to pin number 5 of 9-pin connector.
- Plug in 9-pin connector to COM1 or COM2 Port of Personal Computer.
- Install and run Application Software.

9-9. RS-422 Communication Port Connection

RS-422/RS-232 converter is required to connect serial communication RS-422 between Main Unit and Personal Computer.

- Connect RS-422-TX(-), Yellow wire of Main Unit to RX(-) port of converter.
- Connect RS-422-TX(+), Gray wire of Main Unit to RX(+) port of converter.
- Connect RS-422-RX(-), Blue wire of Main Unit to TX(-) port of converter.
- Connect RS-422-RX(+), Brown wire of Main Unit to TX(+) port of converter.
- Plug in RS-232 9-pin connector of RS-422/RS-232 converter to COM1 or COM2 Port of Personal Computer.
- Install and run Application Software.

10. Wiring for Network



11. Functions

11-1. Standalone Operation.

The STAR 505R is capable of having two readers (entry and exit). The unit receives card data signals from the RF readers and determines whether or not to unlock the door. When an input signal is sent, for example from an activated sensor or if the exit button pressed, the controller generates and logs an appropriate response. All events are kept in its own memory and sent to the host computer. The access controller is a true standalone device that in the event of a malfunction, will not affect other units, even if used in conjunction with one another.

11-2. Operation with Host Computer

All event data can be managed via the host computer. The data transmitted from the controller can be displayed and stored on the host PC.

11-3. Keypad

In the event that a host PC is not used, the integrated keypad and LCD can also be used for the entire programming process.

11-4. Cooperation with Fire Detection Equipment

The STAR505R access controller and fire detection equipment can cooperate to unlock the door in case of fire.

11-5. Anti-Pass-Back

Using an additional RF reader for exiting, the Anti-Pass-Back mode can be utilized. Anti-pass-back prevents a registered user from exiting if the user did not properly register when entering. Likewise if the user has exited without verification by the unit, the user will not be allowed entry on their next attempt.

11-6. Data Backup

The controller retains all user information and event data for over a week, even if the event of loss of power. Using a battery back up the unit can operate normally for a significant time period, depending on the power of the battery used.

11-7. Inputs/ Outputs

The STAR505R access controller has four input ports and four output ports(two relay output ports and two TTL output ports) which can be used to manipulate a wide variety of controls.

11-8. Tamper Alarm

While in operation, if someone attempts to damage or pry the STAR505R from its cabinet, an alarm will buzzer sound and alarm messages can be sent in a variety of ways. The alarm may be canceled by presenting a registered card, the master card, or through the host computer.

11-9. Time Schedule

You can program periods of time when each person (ID number) can access the door. Each user can be programmed individually to address work shifts, weekends and holidays. All scheduling can be programmed through the keypad and LCD or via the software program on the host computer. Also you can set periods of time about output following input, and only output, the former correspond to Input, the latter correspond to Output. So, you can set Input and Output according to each T/S. All these can be defined through the setup menu or application program.

11-10. Output Behavior Setup

The two relays outputs, two TTL outputs, buzzer sound, etc. are customizable. They may be activated or deactivated, and in active mode may be programmed for different lengths of time, different responses to inputs, and can be set through the setup menu or the application program.

11-11. Door Open by Compulsion and Door Open Alarm

When door is opened by compulsion, Door Contact output is generated. And, when the door is being opened by normal operation, after 20 sec. door-open alarm(blink buzzer and green LED) will be generated until the door is closed.

11-12. Duress Mode

In case of Duress, enter the 2 digit Duress Password and press <ENT> and open the door using general process. If you registered ID, then duress output will be generated.

11-13. Programmable ID/EVENT memory

This user friendly device allows you to register 500 ~ 10,000 ID numbers and it can keep 2,500 ~ 7,250 events. Number of ID & Event can be exchanged under the ratio of 2 to 1 which means every 500 users can be convert to 250 events.

12. Operation

12-1. Normal Operation Mode (Safe Mode)

When the Main Unit operates in standby mode (waiting for RF card), the red LED is lit.

12-2. Open the Door

When a registered card (or PIN) is read, the Door will open for 3 seconds.(default)

Registered Card(or PIN)

12-3. Exit (Open the Door)

To request for exit from the inside, an Exit Button(or Exit Reader) can be used to open the door.

Exit Button

Reader

12-4. Action And Alarm Caused by Unregistered Card (or PIN)

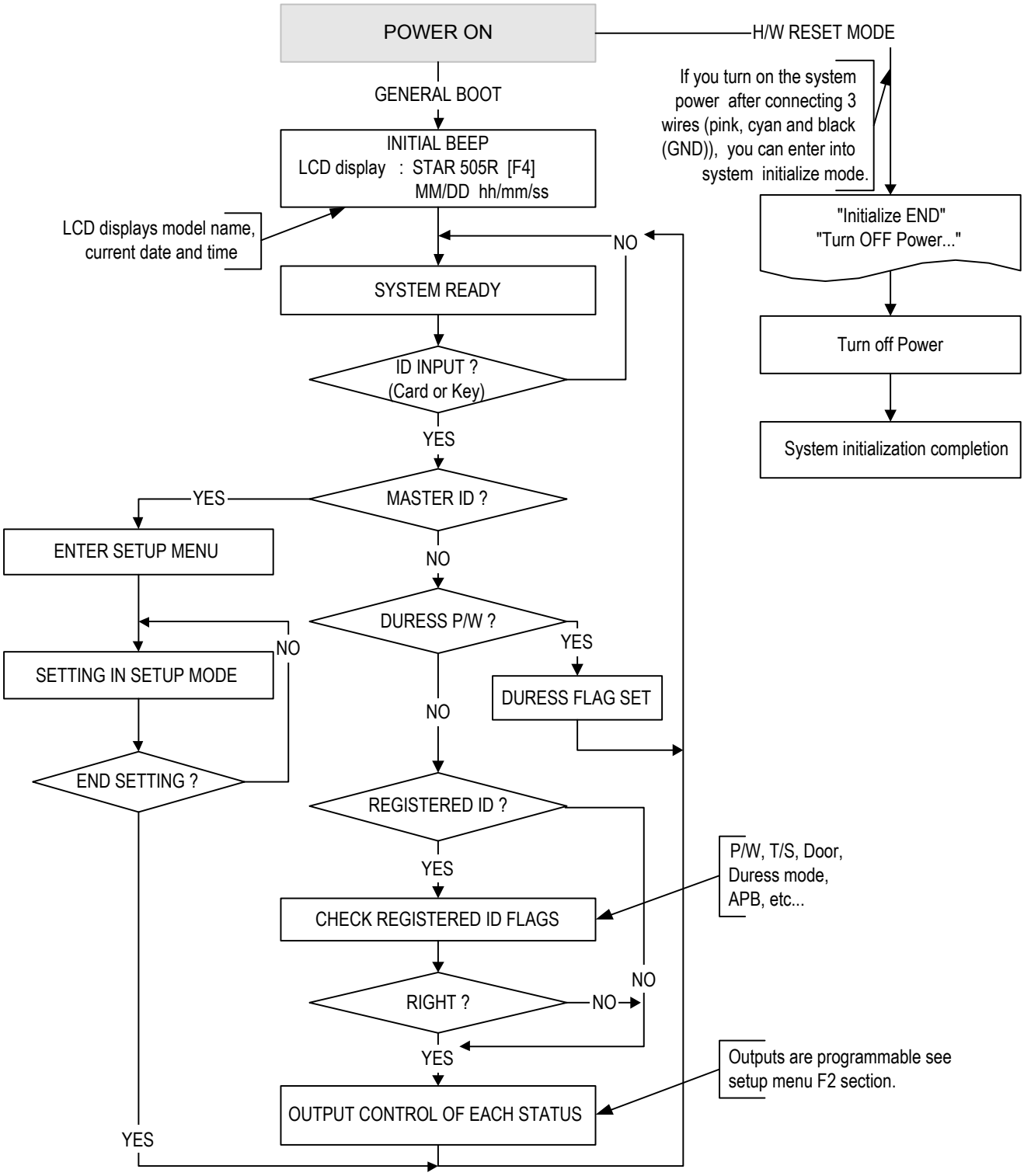
When an unregistered card (or PIN) is read and access is denied, the Alarm can be activated for 3 seconds along with a buzzer sound.

Unregistered Card (or PIN)

(If you do not want to activate the Alarm in case of unregistered access attempt, then you can change this setting as shown in section 14.2.3.)

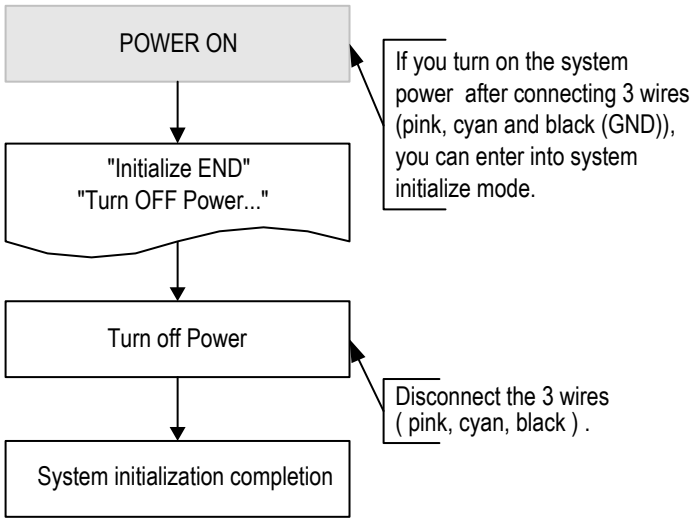
13. Basic settings

13.1 Basic operation

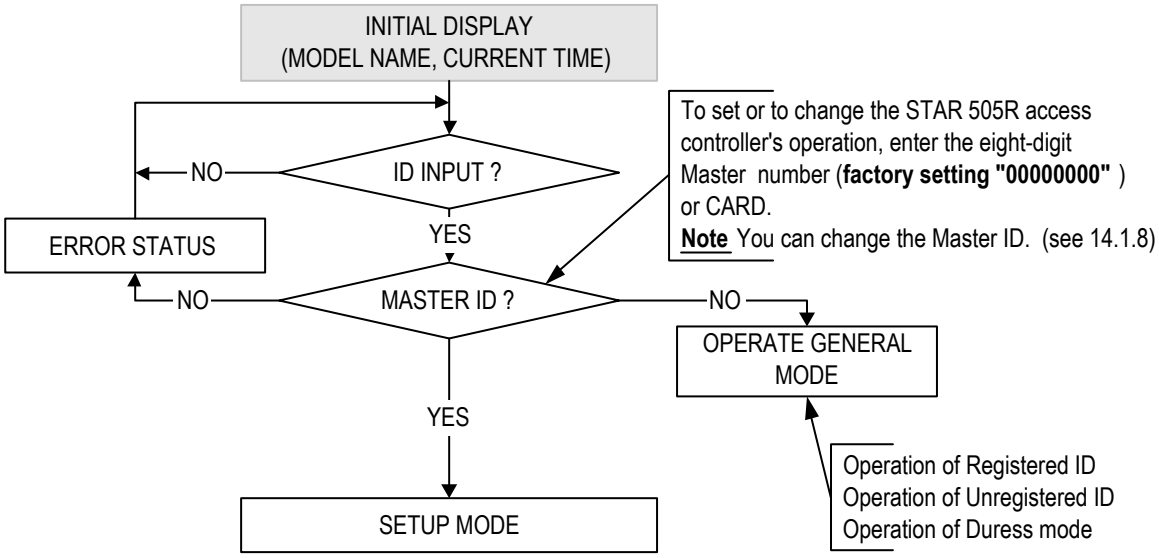


13.2 System Initialization by means of Hardware

Connect the cyan wire, pink wire and black wire(they are seen from the rear view) together and Power on the unit. Power off and disconnect the wires.

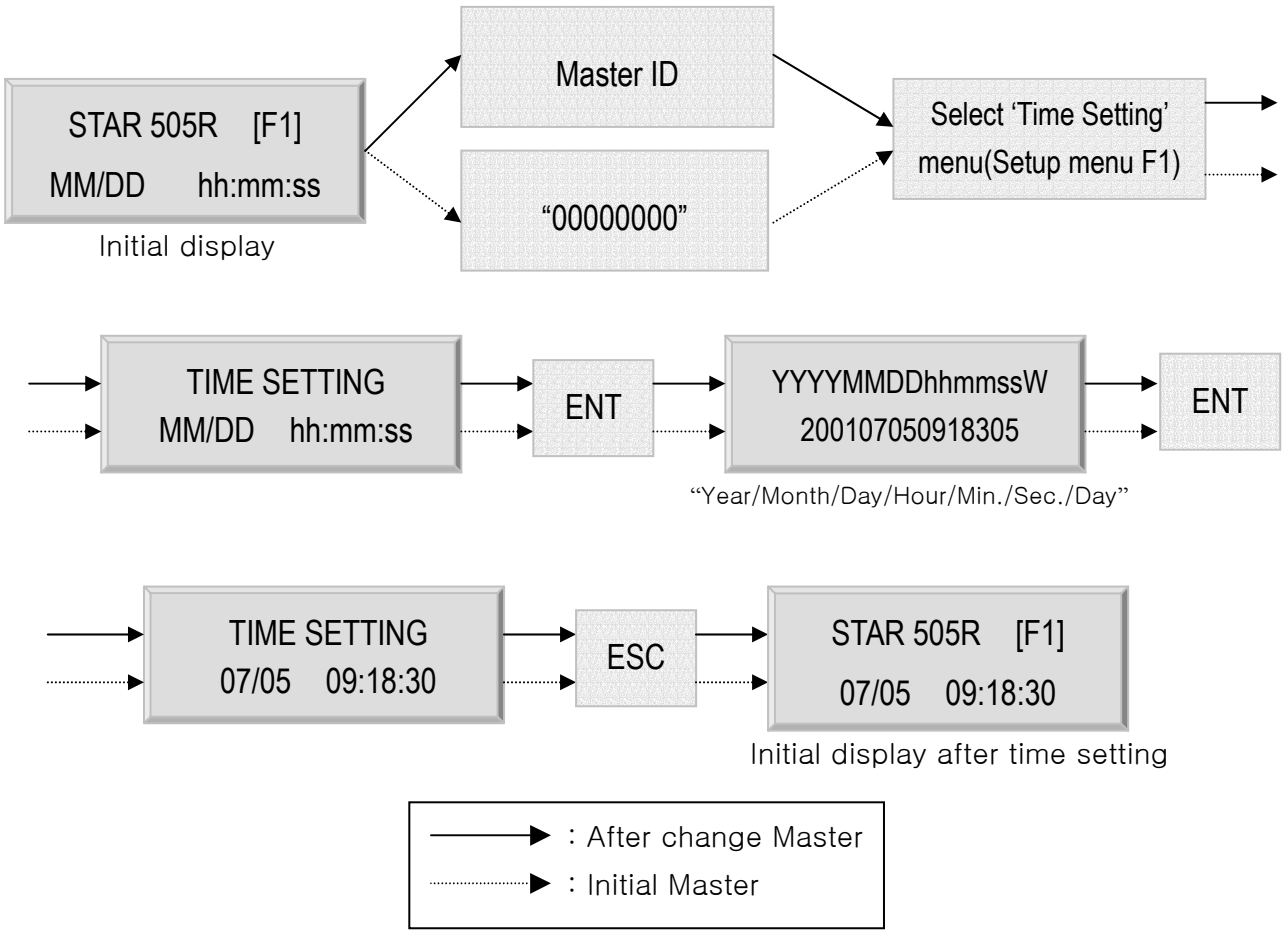

POWER ON
If you turn on the system power after connecting 3 wires (pink, cyan and black (GND)), you can enter into system initialize mode.
"Initialize END"
"Turn OFF Power..."
Turn off Power
Disconnect the 3 wires (pink, cyan, black) .
System initialization completion

13.3 Enter into setup menu



13.4 Setting the Date and Time

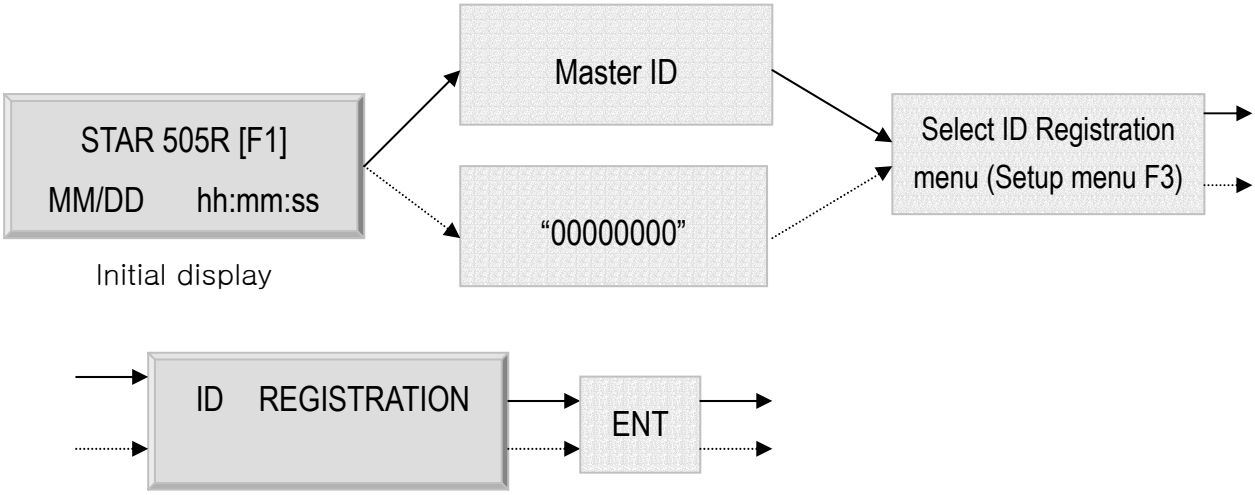
Select 'Time setting' in "**Setup menu F1**" and enter the data of year /month /date /hour /minute /second /day (15digit) as the illustration below shows. You will see the adjusted time on the LCD when finished.



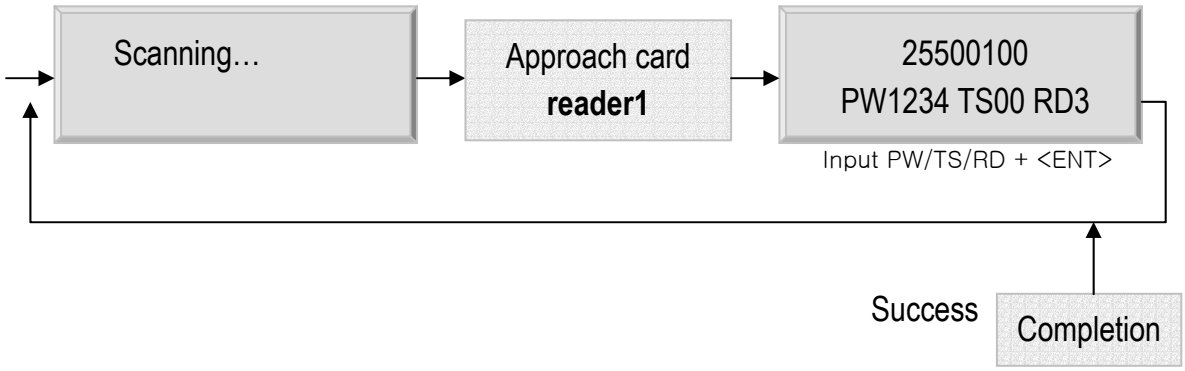
Day code 1 : Sun., 2 : Mon., 3 : Tue., 4 : Wed., 5 : Thu., 6 : Fri., 7 : Sat.
For example : '200106071330253' for Tuesday, June 7, 2001 01:30:25PM.

13.5 Registering Cards

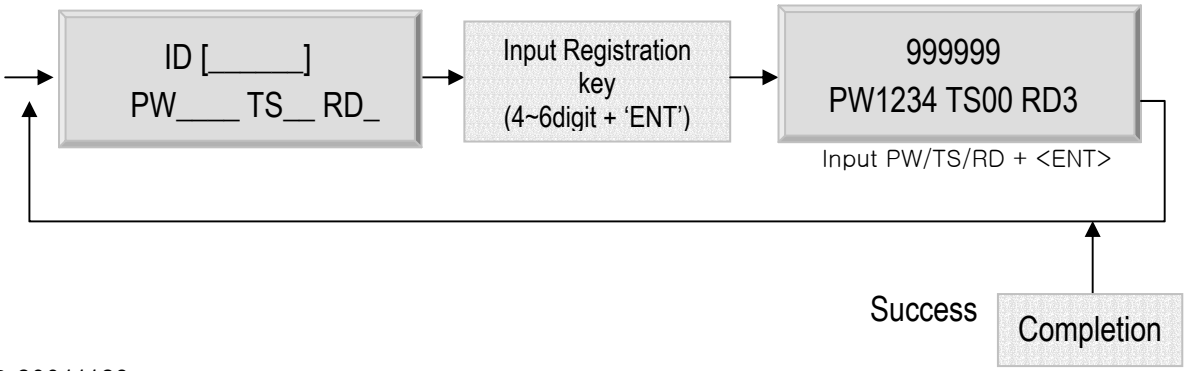
You can register Cards(or PIN) to the system. (See, 14.3.1, page 35)
Select 'ID REGISTRATION' in Setup menu F3, follow through illustration below shows.



1. Registration by RF Cards (RF mode or RF + PW mode)



2. Registration by Key_pad (PIN mode)



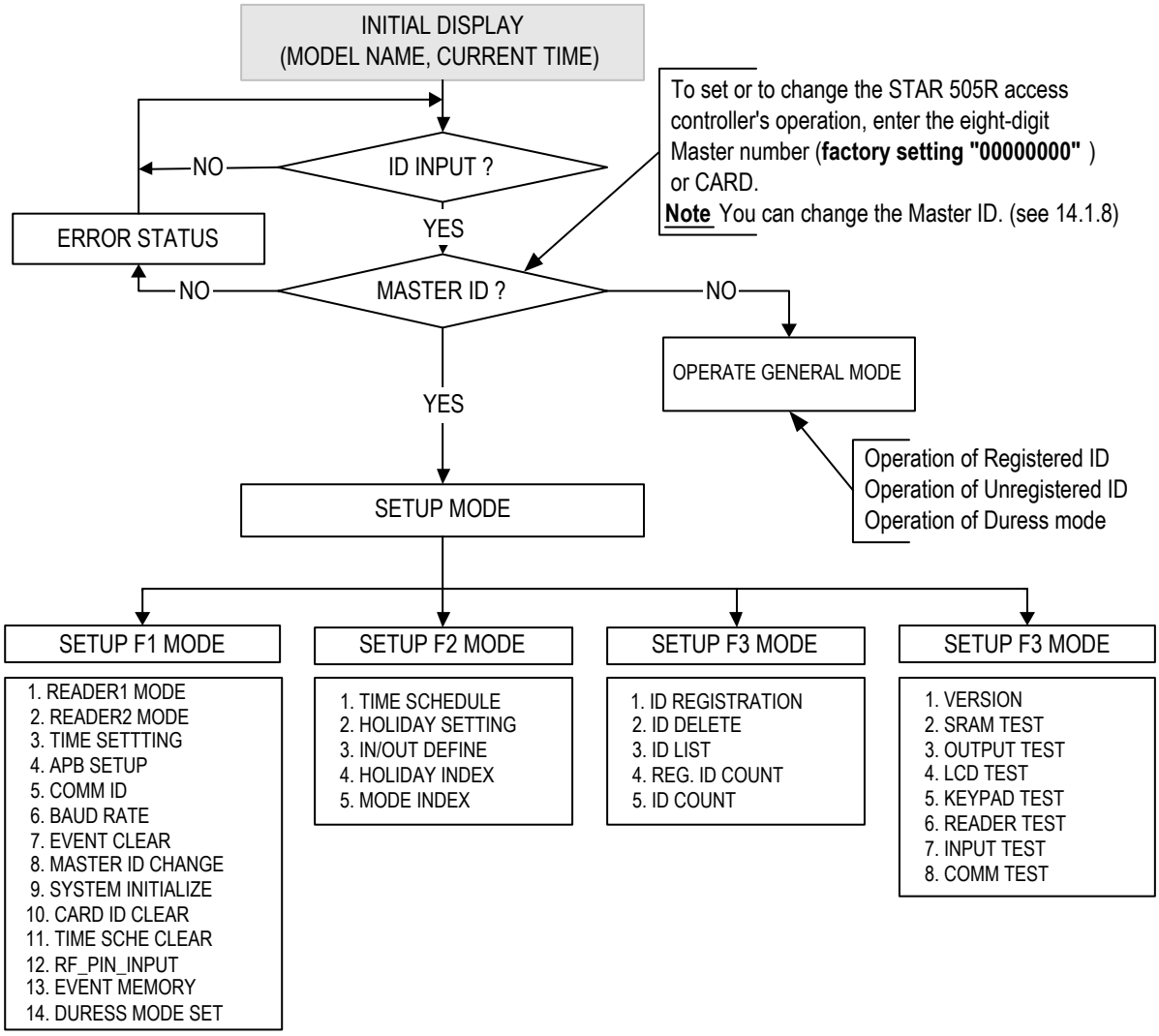
When registering cards,

1. The 'PW' is for password input. the password is needed to access doors when the controller is operating in RF + PW mode. But regardless of the operating mode, it is necessary to input a password when registering.

2. The 'TS' is for Time Schedule index(01~10). To control the accessible periods of time for each card, set Time schedules first(see 14.2.1, page 29) and enter the Time Schedule index number here.
   If there is no need to apply the Time Schedule(anytime accessible with that card), enter '00' for the value.

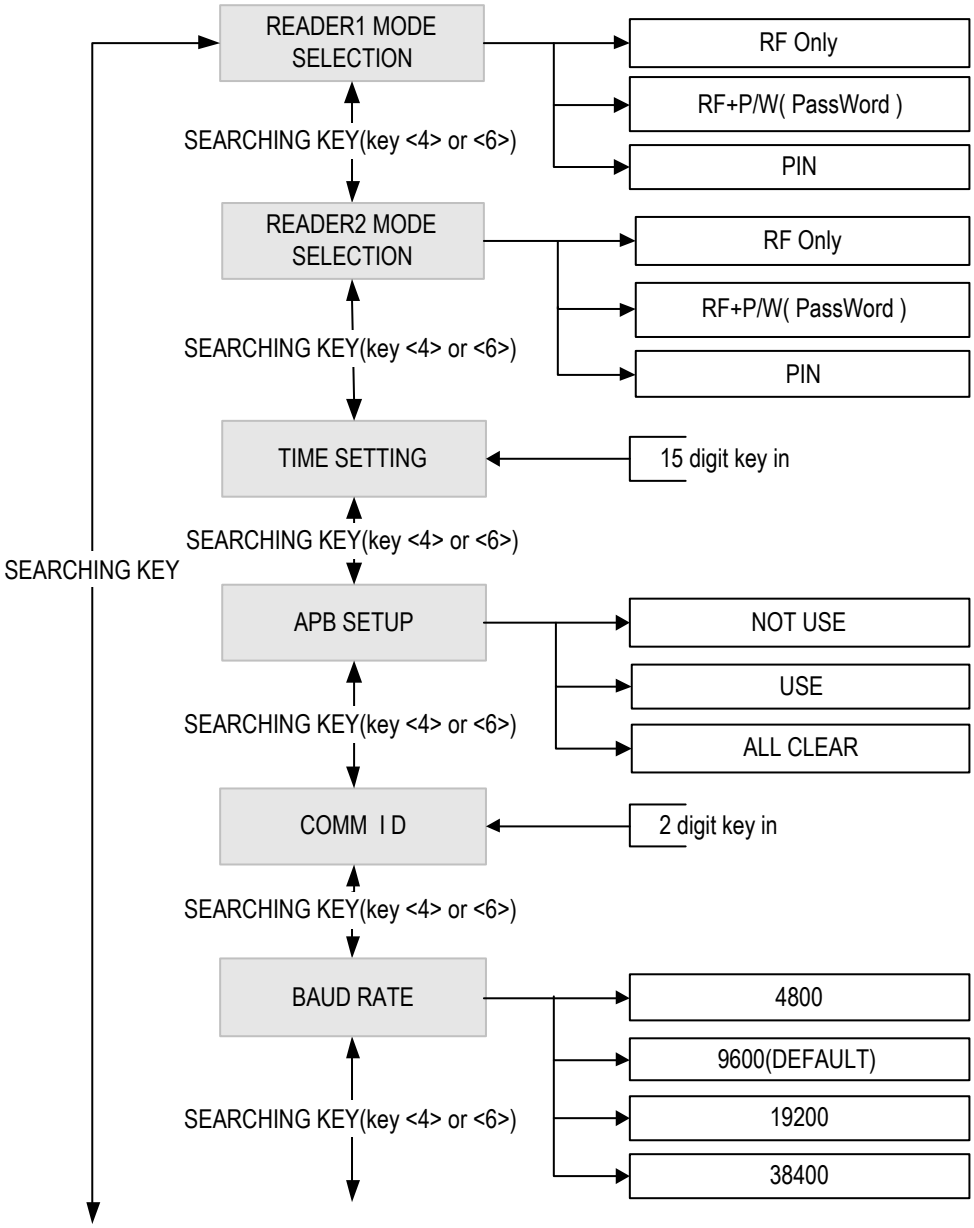
3. The 'RD' is for selecting accessible reader for the card. Usually '3' (both readers) is used when using both entry and exit readers. If '1' is entered for the value, only reader 1 will recognize the card and reader 2 will deny access, indicating 'ACCESS DOOR ERR' on the LCD (this is also the choice when using a one reader setup, meaning using one reader for entry and no reader for exit). Likewise, when '2' is entered, only the reader 2 is accessible with that card and reader 1 access will be denied. And again, both readers are accessible when '3' is entered for the 'RD' value.

14. Setting Changes

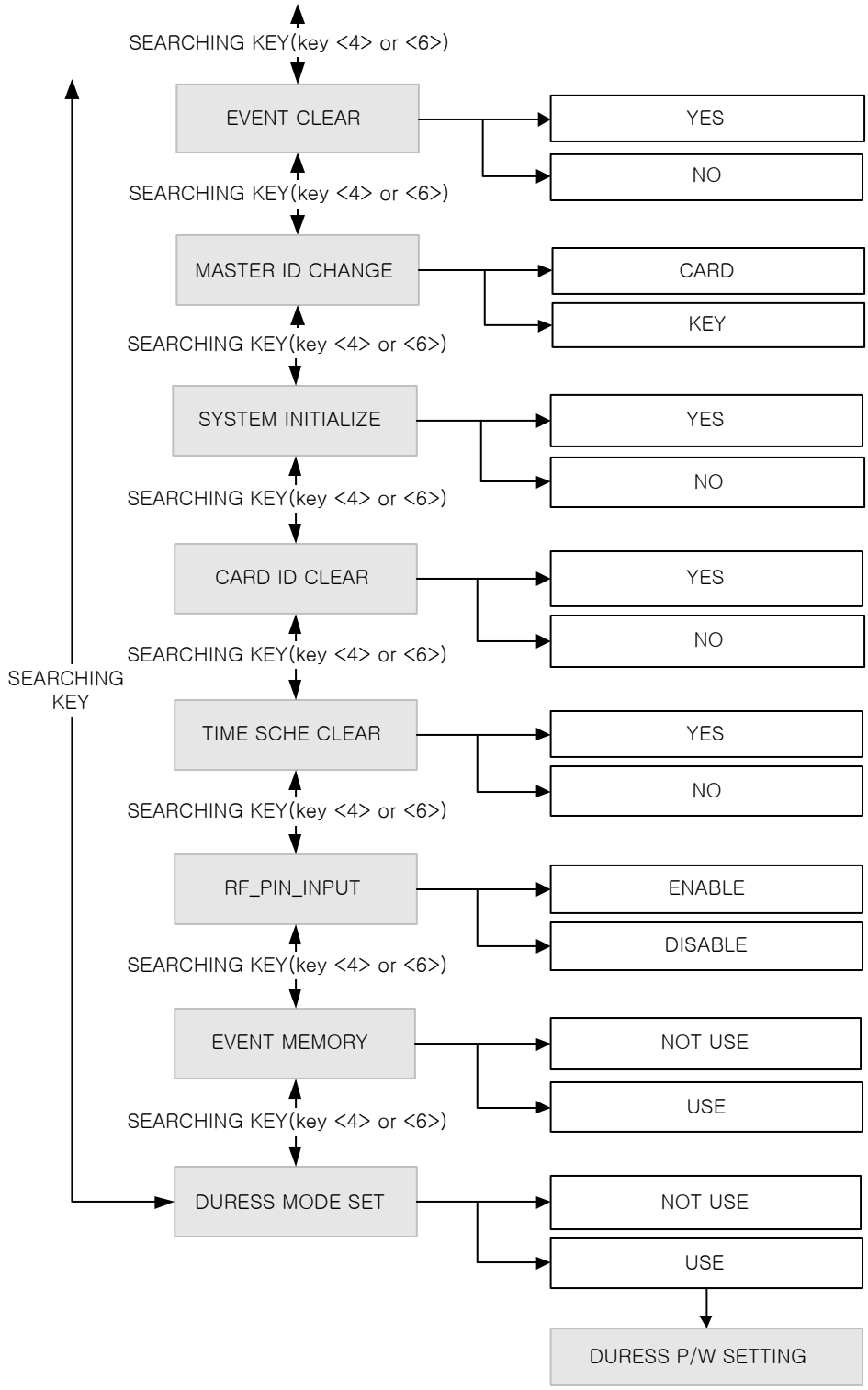


To set or to change the STAR 505R's operation, enter the eight-digit Master number (**factory setting "00000000"**) <ENT>key, then you are ready to set or to change all the settings of the controller. There are four main setup menus. You need to press <F1> key for setup menu F1, <F2> key for setup menu F2, <F3> key for setup menu F3 and <F4> key for setup menu F4.
Note: You can change the Master number. (see 14.1.8)

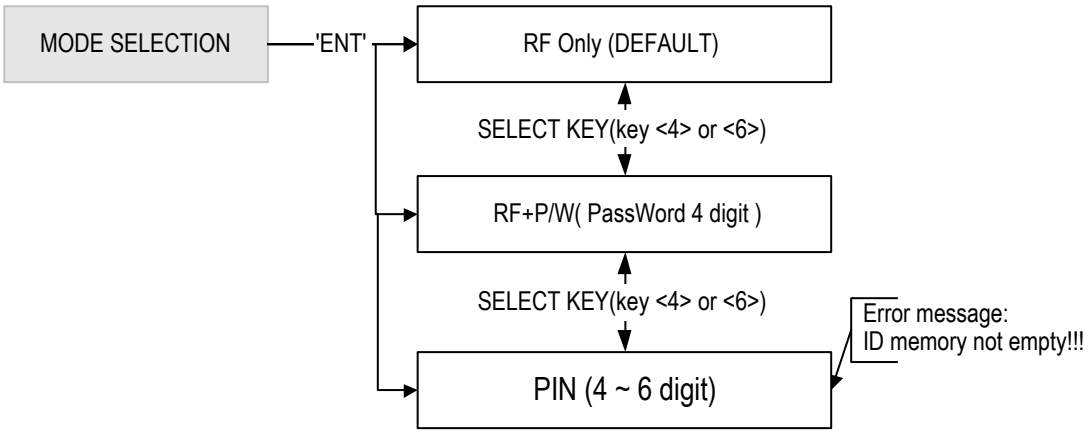
14.1 Setup Menu F1



Note: There are four main setup menus. You need to press <F1> key for setup menu F1, <F2> key for setup menu F2, <F3> key for setup menu F3 and <F4> key for setup menu F4.
The keys <4>, <6>, <2> and <8> are used to change submenus or to select values, <ENT> to select and set, <ESC> to go to upper step or to leave setup mode. When selecting mode or setting values is completed (as with all 4 main menus), the figure on the LCD returns to the first figure of that menu. Then, for the next setting, use <4> and <6> keys.


SEARCHING KEY(key <4> or <6>)
EVENT CLEAR
YES
NO
SEARCHING KEY(key <4> or <6>)
MASTER ID CHANGE
CARD
KEY
SEARCHING KEY(key <4> or <6>)
SYSTEM INITIALIZE
YES
NO
SEARCHING KEY(key <4> or <6>)
CARD ID CLEAR
YES
NO
SEARCHING KEY(key <4> or <6>)
SEARCHING KEY
TIME SCHE CLEAR
YES
NO
SEARCHING KEY(key <4> or <6>)
RF_PIN_INPUT
ENABLE
DISABLE
SEARCHING KEY(key <4> or <6>)
EVENT MEMORY
NOT USE
USE
SEARCHING KEY(key <4> or <6>)
DURESS MODE SET
NOT USE
USE
DURESS P/W SETTING

14.1.1 Changing Reader1 Operating Mode




```
READER1 MODE
RF   ONLY
```

This menu is to select reader1 operating mode. You may choose to use prox, PIN # verification, or both. The lower line on the LCD indicates the current operating mode. Press the <ENT> key to change the mode.

```
READER1 MODE
-->RF   ONLY
```

```
READER1 MODE
-->RF + PW
```

```
READER1 MODE
-->PIN
```

Then, this figure appears on the LCD, press <4> key or <6> key to toggle the mode, and finish selecting by pressing <ENT> key.
For the next setting, use <4> and <6> keys.

Note:
- RF only : The door is accessible with the card alone.
- RF + PW : To access the door, the card and the password is needed.
- PIN : The door is accessible with the Identity Number(4~6 digit) by the keypad

14.1.2 Changing Reader2 Operating Mode

```
READER2 MODE
RF   ONLY
```

This menu is to select reader2 operating mode. You can choose whether to use password to each access or not. The lower line on the LCD indicates the current operating mode. Press <ENT> key to change the mode.

```
READER2 MODE
-->RF   ONLY
```

Then, this figure appears on the LCD, press <4> key or <6> key to toggle the mode, and finish selecting by pressing <ENT> key. For the next setting, use <4> and <6> keys.

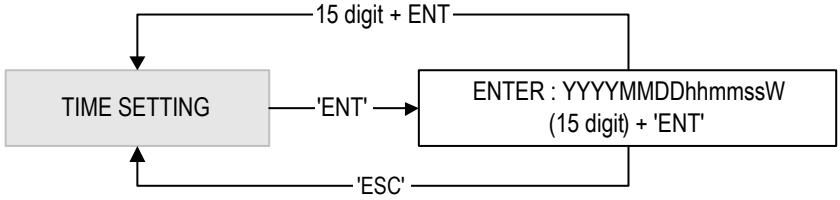
```
READER2 MODE
-->RF + PW
```

READER2 MODE --> PIN

Note: **The relation between Reader1, Reader2**

	Reader1	Reader2
1.	RF only mode	RF only mode
2.	RF only mode	RF + PW mode
3.	RF + PW mode	RF only mode
4.	RF + PW mode	RF + PW mode
5.	PIN mode	PIN mode

14.1.3 Time Setting



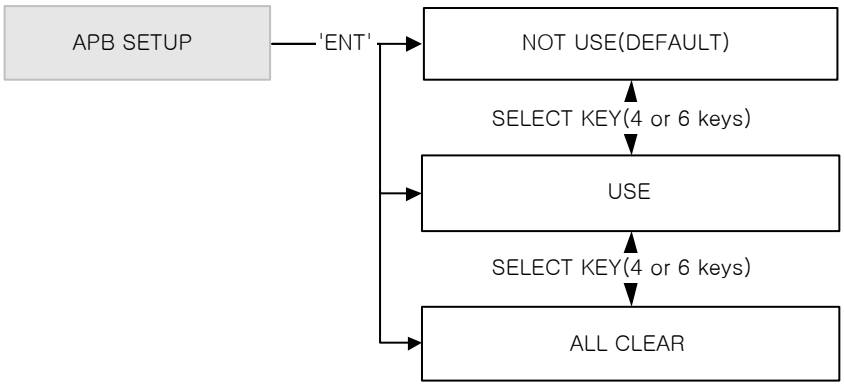
TIME SETTING MM/DD hh:mm:ss

The lower line on the LCD indicates present time. To set time, press <ENT> key.

YYYYMMDDhhmmssW _ _ _ _ _ _ _ _ _ _ _ _ _ _

Enter the correct information of the year, month, date, hour, minute, second, day code in due order, then the setting is finished. If the input information is out of range, an error message appears on the LCD and the current time value is to be kept.
Day code 1 : Sun., 2 : Mon., 3 : Tue., 4 : Wed., 5 : Thu., 6 : Fri., 7 : Sat.
For example'200106071330253' for Tuesday, June 7, 2001 01:30:25PM.

14.1.4 Anti-Pass-Back Setup



APB SETUP NOT USE

You can select whether the Anti-Pass-Back(APB) is used or not. The lower line on the LCD indicates the current mode.
To change mode, press <ENT> key.

APB SETUP --> NOT USE APB SETUP --> USE	Press <4> or <6> to toggle the between options NOT USE and USE. Choose your selection by pressing the <ENT> key. After pressing enter, you will be returned to the setup menu. Then, for the next setting, use <4> and <6> keys. **Note**: If you select All Clear, then system ignore all registered ID's APB flag only once.

14.1.5 Setting Communication ID

COMM ID SETTING	This is communication ID setting menu. To change the ID, press <ENT> key.
COMM ADDRESS 00	The number on the LCD is the current communication ID(Device No.). Press <ENT> key again to set a new communication ID.
COMM ADDRESS 01	When the cursor is blinking, enter a new ID(two-digit number), then the setting is completed. For the next setting, use <4> and <6> keys. Possible ID is between 00 - 31 inclusive.

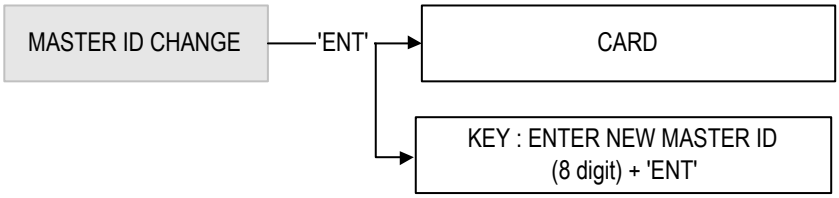
14.1.6 Adjusting Communication Speed

BAUD RATE 9600	The number on the LCD is the current communication speed in Baud rate. Press <ENT> key to adjust the speed.
BAUD RATE --> 9600 BAUD RATE -->19200	Available speeds are 4800bps, 9600bps and 19200bps and the default value is 9600 bps. Press <4> or <6> to change speed, and finish selecting by pressing <ENT> key. Then, for the next setting, use <4> and <6> keys.

14.1.7 Clearing Event Data Buffer

EVENT CLEAR	Used to erase ALL of the event data such as the permitted access and denied access records. If you want to do so, press <ENT> key.
EVENT CLEAR 1 – Yes , 0 – No	When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation. **CAUTION: Be careful in using this operation, or you may lose important data.**

14.1.8 Changing Master ID



MASTER ID CHANGE	Press <ENT> key to change the current Master ID. You should use the new Master ID to access the setup menu since the change is finished.
MASTER ID CHANGE 1: Card 2: Key	Master ID Number is registered in the controller by RF cards or through the keypad. For RF cards, Press <1>key, the keypad, <2>key, or you can quit the registration by pressing <ESC>key.
Scanning ...	The reader is waiting for an RF card which is to be registered. The card number will appear with a beep as the card is read. After recognition, the next message will appear.
XXXXXXXX [_ _ _ _]	Enter a new Master password(four digit) and finish changing by pressing <ENT> key.
MASTER ID CHANGE [_ _ _ _]	This figure appears When you press the <2>key for through-keypad registration, then you are to enter eight-digit number. **Eight digit ID** : 00000000 ~ 99999999
Master Card Registered	The figure indicates that changing Master ID is finished successfully, and soon , will return to the first figure of this menu. For the next setting, use <4> and <6> keys.

14.1.9 Initializing the System

SYS INITIALIZE	This operation will initialize the STAR 505R. Press <ENT> key, if an initialization is needed (first time installation or resetting in the event of a malfunction). **CAUTION: Initializing will erase all stored data incl. registered IDs event data.**
Sys Initializing 1 – Yes , 0 – No	When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation, then the LCD displays the first figure of this menu.
System Initializing..	This message appears while the system is being initialized. When finished, you will be automatically returned to the setup menu.

14.1.10 Clearing Card IDs

CARD ID CLEAR	Used to erase ALL the registered card ID data stored in the device. If you want to do so, press <ENT> key.
Card ID Clear 1 – Yes , 0 – No	When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation, then the LCD automatically returns to the start menu. **CAUTION: This function will remove ALL registered ID cards.**

14.1.11 Clearing Time Schedule

TIME SCHE CLEAR	Used to erase ALL the time schedules. If you want to do so, press <ENT> key. **CAUTION: This function will erase ALL programmed time schedules.**
TIME SCHE CLEAR 1 – Yes , 0 – No	When this figure appears on the LCD, press <1> key to clear and <0> key to cancel the operation, then the LCD automatically returns to the start menu.

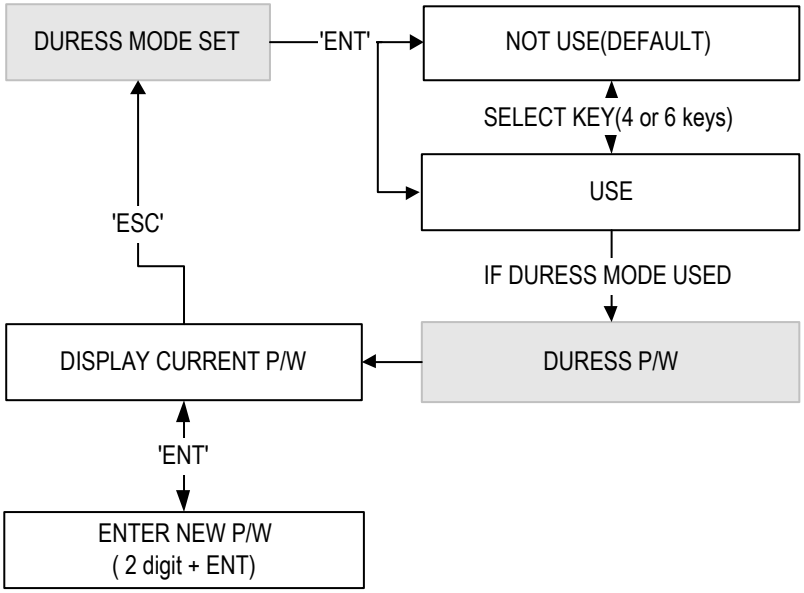
14.1.12 Selecting ID Input mode

RF_PIN_INPUT ENABLE	You can enable PIN(card number) to be input through the keypad, so that someone who doesn't carry RF cards with him can access the door. When it is disabled, accessing the door by keypad will be denied. The display shows the current mode. Press <ENT> key to toggle the mode.

14.1.13 Selecting event memory use or not use

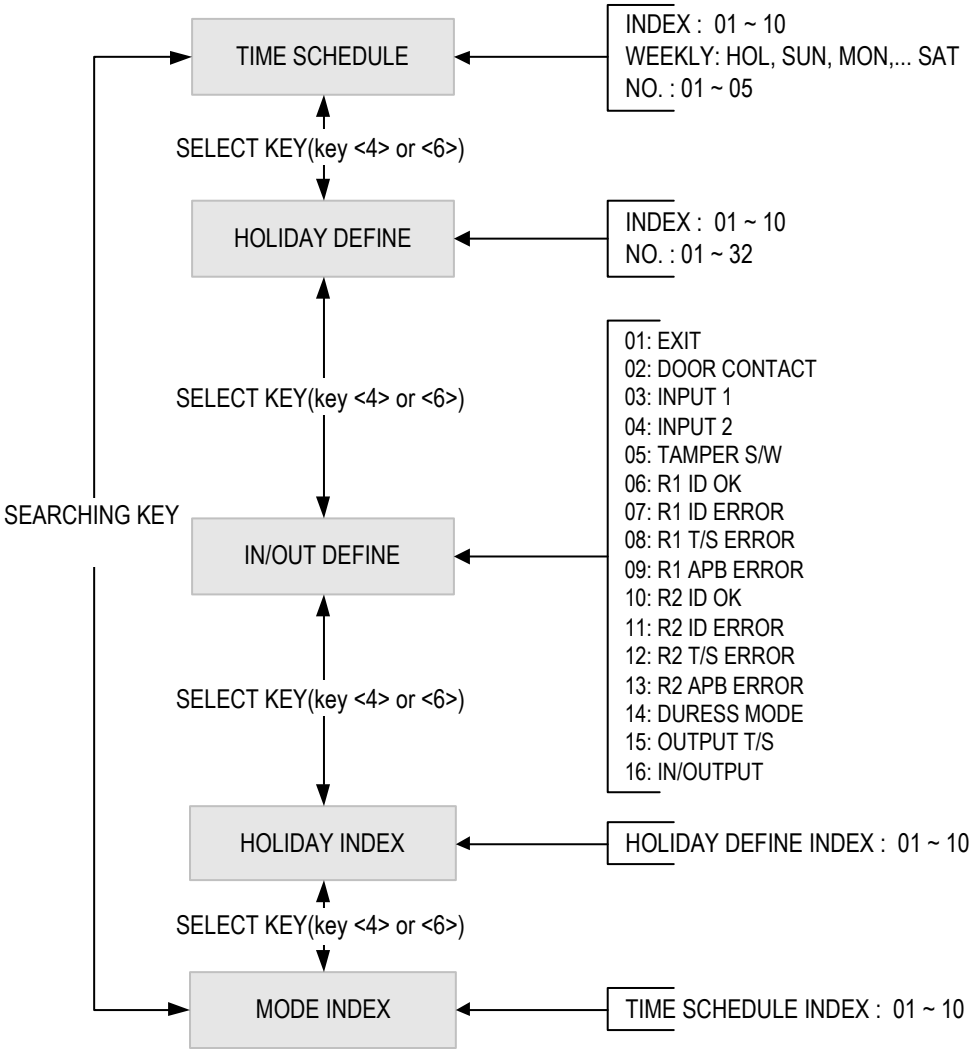
EVENT MEMORY NOT USE EVENT MEMORY −−>USE	You can select whether the Stand Alone is used or not. The lower line on the LCD indicates the current mode. Press <4> or <6> to toggle the mode, from NOT USE to USE or the reverse, and finish selecting by pressing <ENT> key. **Note**: If you select NOT USE, then system will not display event full message.

14.1.14 Setting Duress Mode



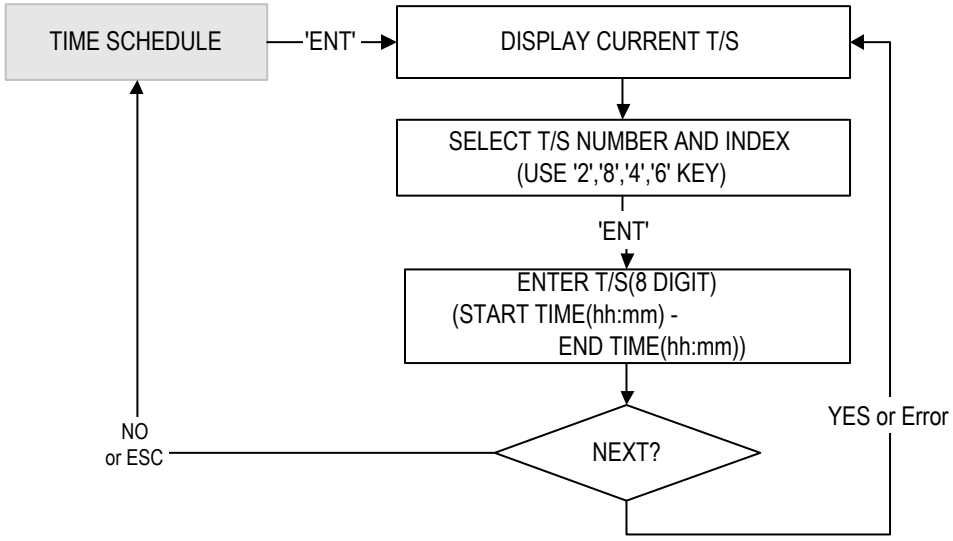
DURESS MODE SET NOT USE	You can select whether the Duress mode is used or not. The lower line on the LCD indicates the current mode. To change mode, press <ENT> key.
DURESS MODE SET −−> USE DURESS P/W 00 DURESS P/W 00	If you select USE, then system displays the current DURESS P/W. To change P/W, press <ENT> key. **Note**: You can set the duress output in setup menu F2 (in/out define). In case of Duress, enter the 2 digit Duress Password and press <ENT> and open the door using general process. If you registered ID, then duress output(see 14.2.3) will be generated.

14.2 Setup Menu 2



Note: The keys <4>, <6>, <2> and <8> are used to change menu, <ENT> to select and store. Press <ESC> to go to back one level and/or to leave setup mode.

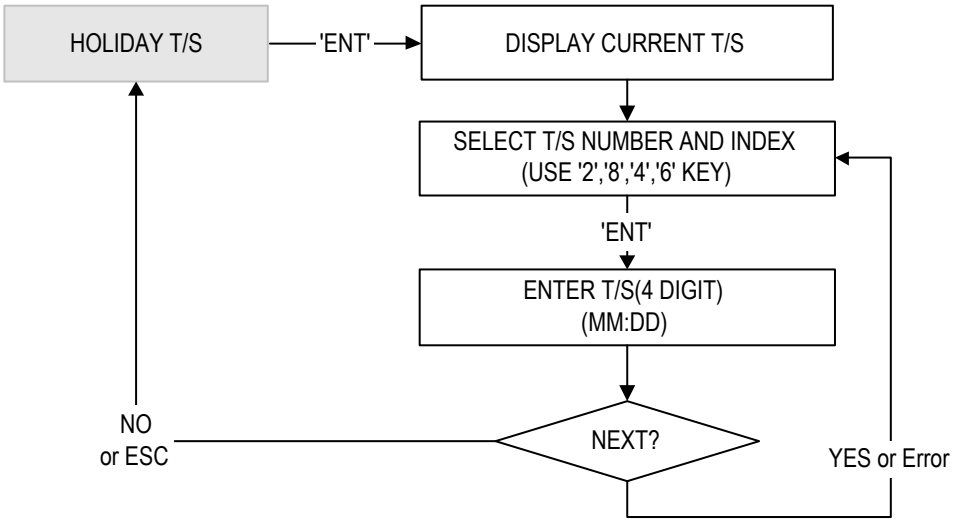
14.2.1 Registering and Changing Time Schedule



TIME SCHEDULE	You may program time schedules to grant and restrict access for each user. There can be up to ten different schedules. A minimum of one schedule must be defined. If only one schedule is programmed the most common setting allows access for all users 24 hours / day. A time schedule can be programmed for each day of the week and holidays (see 14.2.2 page 30), and five shifts can be defined for each day. To set time schedules, press <ENT> key from this menu.
T/S : 01 HOL : 1 00:00 – 00:00	Press <2> key or <8> key to adjust the Time Schedule (T/S) number (1-10) and the day of the week (Mon-Sun and 'HOL'). Define which shift of the day (1-5), using the <4> key and <6> key. 'HOL' refers to specific holidays you will register(see 14.2.2 page 30). Press <ENT>key, and the cursor will blink, then enter the beginning time of the period, in the form of hour(2-digit):minute(2-digit) and the ending time in the same form. Then the lower line will indicate the defined period. For more schedules, repeat the process. To end time scheduling, press <ESC> key.

☞. **Possible values for time scheduling**
1) Time schedule number : 01 ~ 10 (Needed when IDs are registered)
2) A day of the week : MON, TUE, WED, THU, FRI, SAT, SUN, HOL
3) Index : 1 ~ 5(referred to the five periods of time of a day)

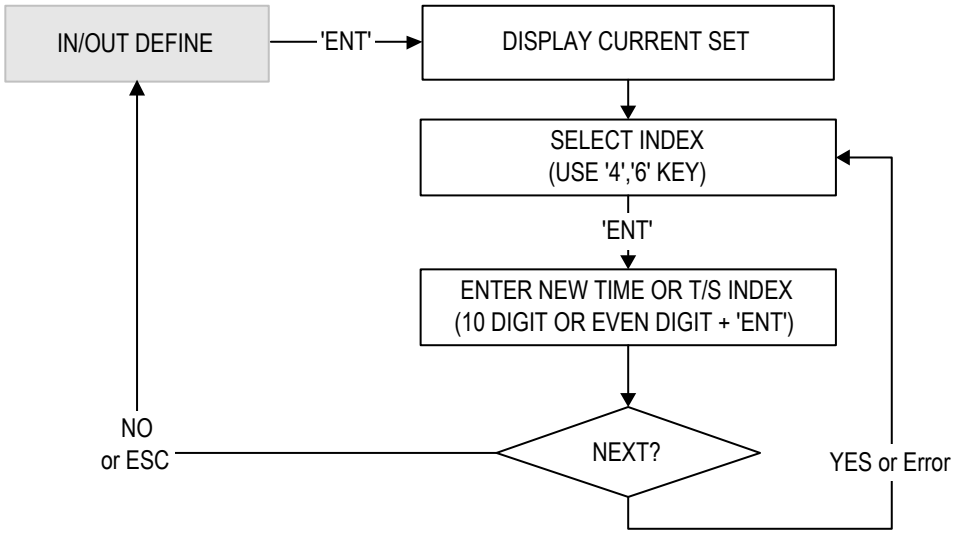
14.2.2 Registering and Changing Holiday Time Schedule



HOLIDAY T/S	You can register up to 32 specified “holidays,” per year for each schedule setting. There can be 10 other registration sets created, meaning holidays can be set for up to 10 years. Press <ENT> to register the days.
HOL T/S: 01 #01 00:00(month : date)	With <2> key and <8> key, select the date registration set number (1~10), and with <4> key and <6> key, select the index for the days (1~32). Then, press <ENT> key, and the cursor will blink, then enter the date, in the form of Month (1~12):date, Then the LCD will indicate the defined date. Now, a day has been registered. For further registration, repeat the process. To end registering the days, press <ESC> key to return to the setup menu.

☞. **1) Holiday Time schedule(Date registration set) number : 01 ~ 10(10 years)**
2) Index for the days : 01 ~ 32(32 days)

14.2.3 Defining Outputs in Compliance with Inputs



IN/OUT DEFINE	You can program or deactivate each output to be generated and choose how long (in seconds) they will last. There are default values as seen in the table 1 below. To set the values, press <ENT> key.
1. EXIT 03 00 00 00 00	Select input sources by changing index No. with the keys <4> and <6>, and press <ENT> key, and you'll see a cursor blinking at the first digit, from the left, of the five couples of digit, which corresponds to relay1, relay2, TTL1, TTL2 and buzzer, respectively. Then enter the delay times(refer to the table below) one by one. Now, an inputs/outputs definition has completed. For further definition, repeat the process. To end defining inputs/outputs, press <ESC> key, and you will see the first figure of the menu. **Note**: The five couples of digit of [15] Output T/S and [16] Input/Output T/S are time schedule indexes.

Table 1 : The relation between index(source, Input and Output(default))

Index No	Relay1	Relay2	TTL1	TTL2	Buzzer
[1] Exit button	03	00	00	00	00
[2] Door contact	00	03	03	03	03
[3] Input #3	00	00	00	00	00
[4] Input #4	00	00	00	00	00
[5] Tamper S/W	00	99	99	99	99
[6] Reader(1) ID OK	03	00	00	00	00
[7] Reader(1) ID Error	00	03	00	00	00
[8] Reader(1) ID T/S Error	00	03	00	00	00
[9] Reader(1) APB Error	00	03	00	00	00
[10] Reader(2) ID OK	03	00	00	00	00
[11] Reader(2) ID Error	00	03	00	00	00
[12] Reader(2) ID T/S Error	00	03	00	00	00
[13] Reader(2) APB Error	00	03	00	00	00
[14] Duress Mode	03	00	03	03	03
[15] Output T/S	00	00	00	00	00
[16] Input/Output T/S	Input1	Input2	Input3	Input4	Input5
	00	00	00	00	00

Note ;

1) The relation between index number and input is shown in the table above.
2) The inputs of index No. 3~4 are signals from extra equipments, such as PIR sensor, Fire sensor and etc, connected to the controller.
   The index No. 5 corresponds to the tamper switch input (activated when the controller has a physical damage).
   The messages of the No. 6 ~ 13 is generated after reading a card.
   The index No. 15 ~ 16 are not output time but time schedule number.
3) The second line of the LCD shows the output status.(see the table)
   (**00** :No operation , **99** : Always on , **01~98** : Activated for given seconds long)
4) Relay 1(**Lock Door**), Relay 2(**Alarm**)

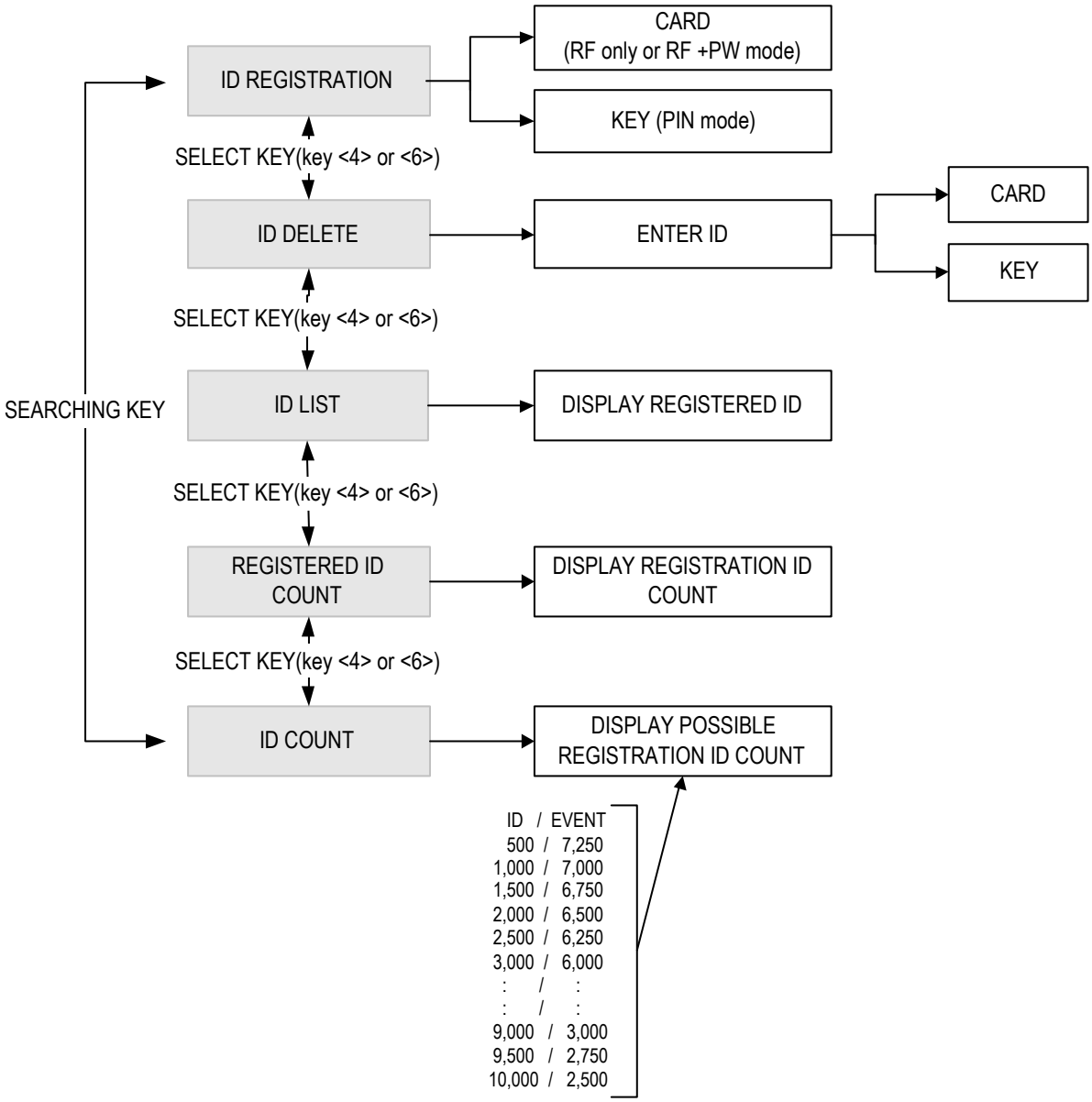
14.2.4 Setting Holiday Index

HOLIDAY INDEX	You choose which Holiday time schedule(date registration set) is to be used. The default index is “00”. Choose the schedule you programmed(01-10). If necessary, press <ENT> key.
HOL INDEX 00	Enter Index number(00~10) and press <ESC> key to finish selecting. You will then automatically be returned to the setup menu.

14.2.5 Setting Mode Index

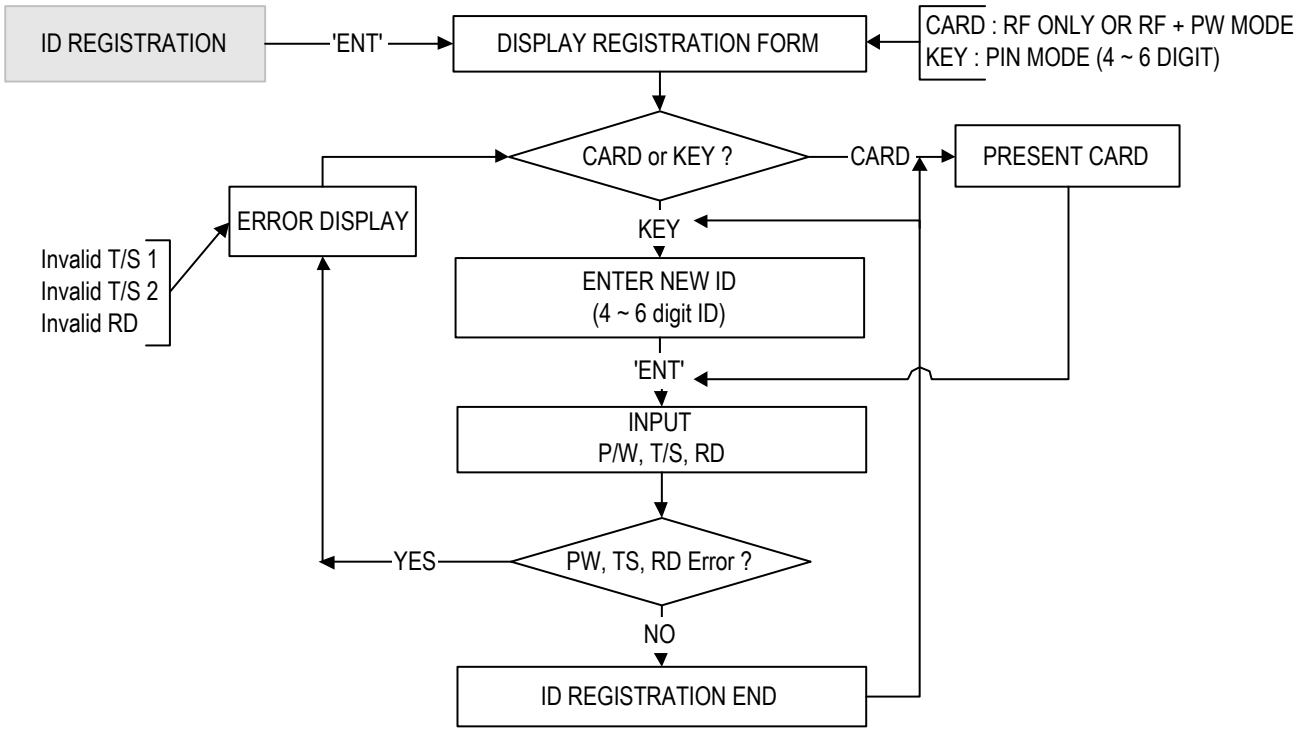
MODE INDEX	The function to apply the Time schedule to operating mode, which must be applied. The default index is “00”. If necessary, press <ENT> key.
MODE INDEX 00	Enter Index number(0~10) and finish. During the period of time the applied T/S indicates, your controller will operate in RF only mode and for the rest of the time, in RF card + four digit password mode. Press <ESC> key to end the selecting, then the first figure of the menu is displayed on the LCD.

14.3 Setup Menu 3



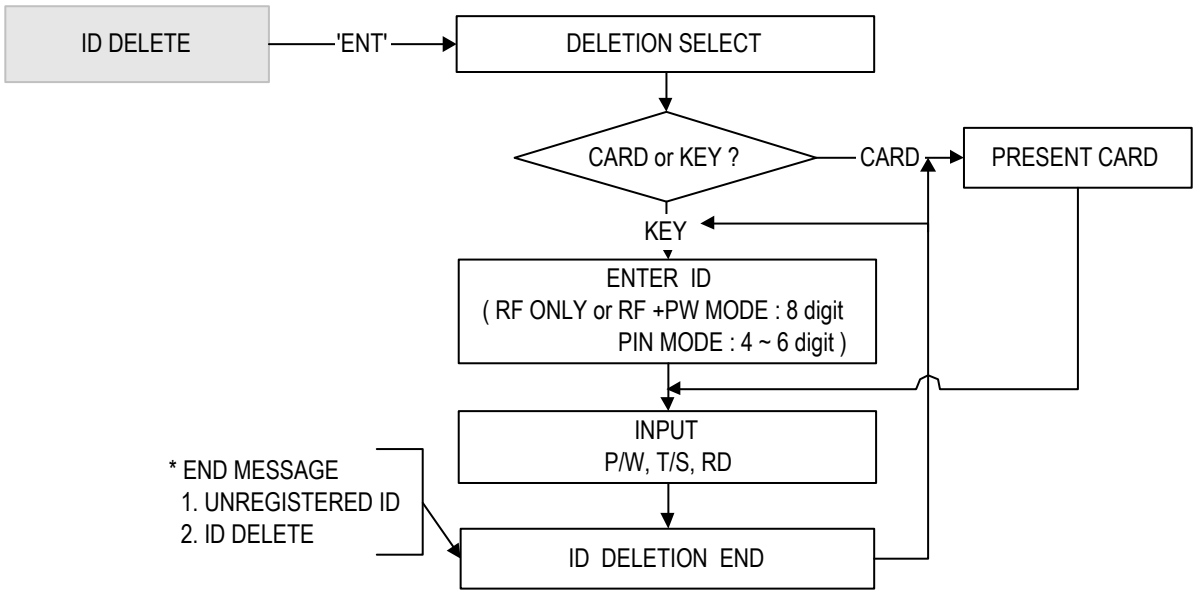
Note: On setup menu F3, there are functions to register additional IDs, to delete registered IDs and to display the registered IDs.

14.3.1 Registering ID



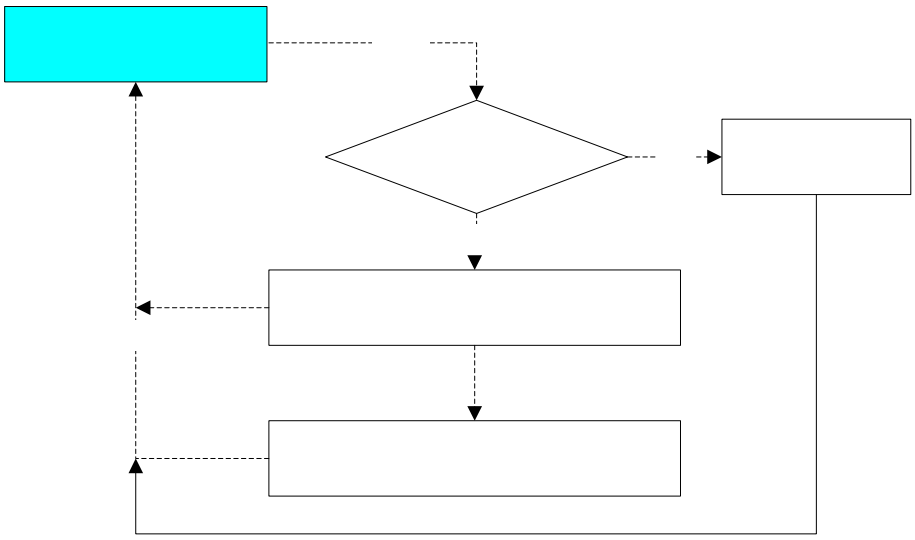
ID REGISTRATION	This is ID registration menu. To register additional IDs. Press <ENT> key.
Scanning ...	The reader is waiting for an RF card which is to be registered. The card number will appear with a beep as the card is read. **PIN mode**: Enter the 4 ~ 6 digit(PIN mode) ID number that you want to register. Then the following message will show on the LCD.
[_ _ _ _ _ _ _ _] PW_ _ _ _ TS_ _ RD_	The LCD's upper line shows the number read, and the lower line indicates that the four-digit password, time schedule index and reader code are needed. Enter those values, referring to the following information. Then the registration of the card is finished, and the reader will be waiting for another card, displaying the second menu of the menu. Press <ESC> key to end registering IDs, then the first figure of the menu will appear. 1) PW(password) : the password used in RF + password mode. 2) TS(Time schedule) : 00 : Anytime accessible 01 ~ 10 : Accessible according to each T/S index 3) RD(Reader code) - 1 : for using reader 1 alone, 2 : for using reader 2 alone, 3 : for using both reader 1 and 2.
XXXXXXXX ID Registered	
ID Registered	

14.3.2 Deleting ID



ID DELETE	To delete some registered IDs, press <ENT> key.
ID DELETE 1: Card, 2: Key	ID Number is deleted in the controller by RF cards or through the keypad. For RF cards, Press <1>key, the keypad, <2>key, or you can quit the deletion by pressing <ESC>key. If reader mode is PIN mode, Press <2> key.
Scanning ...	The reader is waiting for an RF card which is to be deleted. The card number will appear with a beep as the card is read. You can quit the deletion by pressing <ESC> key.
Enter Card No. -> _ _ _ _ _ _ _ _	Enter the eight-digit(RF mode or RF +PW mode) ID number that you want to delete. Then the following message will show on the LCD. You can quit the deletion by pressing <ESC> key.
ID Deleted	The display shows on the LCD for a second, indicating that the deletion is finished successfully, and then waiting for a next RF card(ID number).

14.3.3 Listing Registered IDs



ID LIST	If you wish to list the registered user IDs, press the <ENT> key in this menu.
MEMORY EMPTY	This message is displayed when there is no registered users.
XXXXXXXX PWXXXX TSXX RDX	An ID number, the password, the applied T/S and the reader code are displayed on the LCD, and you can scroll to the next ID using the <4> and <6> keys. Press <ESC> key when you finished to return to the setup menu.
ID LIST TOP	This message will appear momentarily when scrolling back to the top of the list (using the <4> key). After a few seconds the ID for the first user reappears.
ID LIST BOTTOM	This message will appear momentarily when scrolling forward (using the <6> key). After a few seconds it disappears revealing the very first ID number.

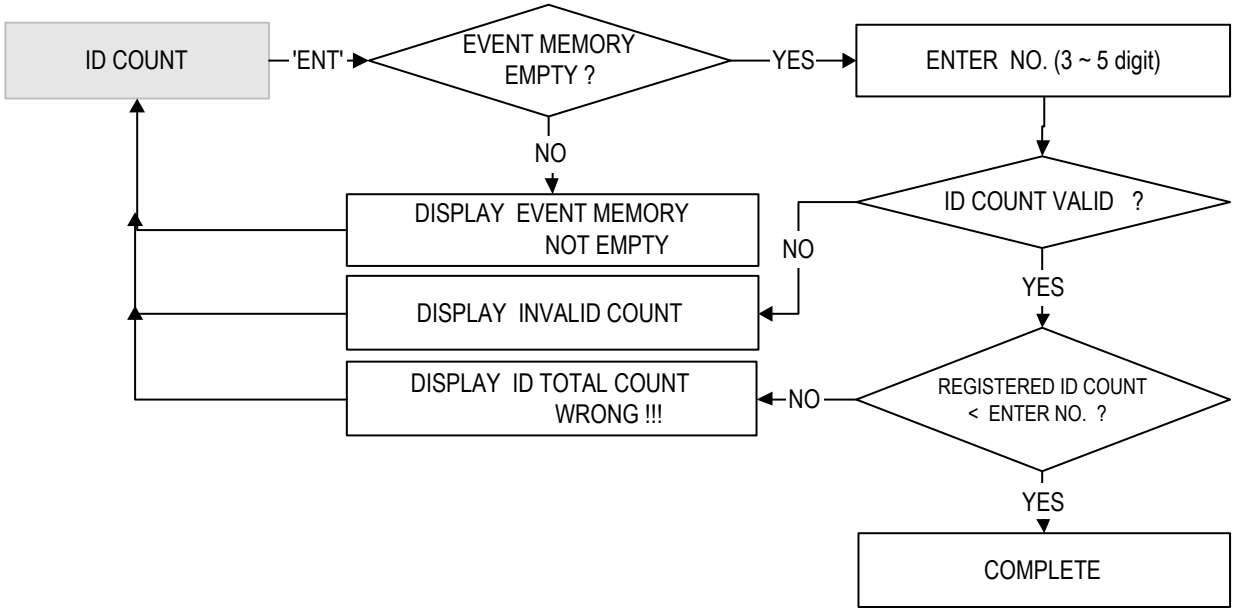
ID LIST

‘ESC’

14.3.4 Counting Registered IDs

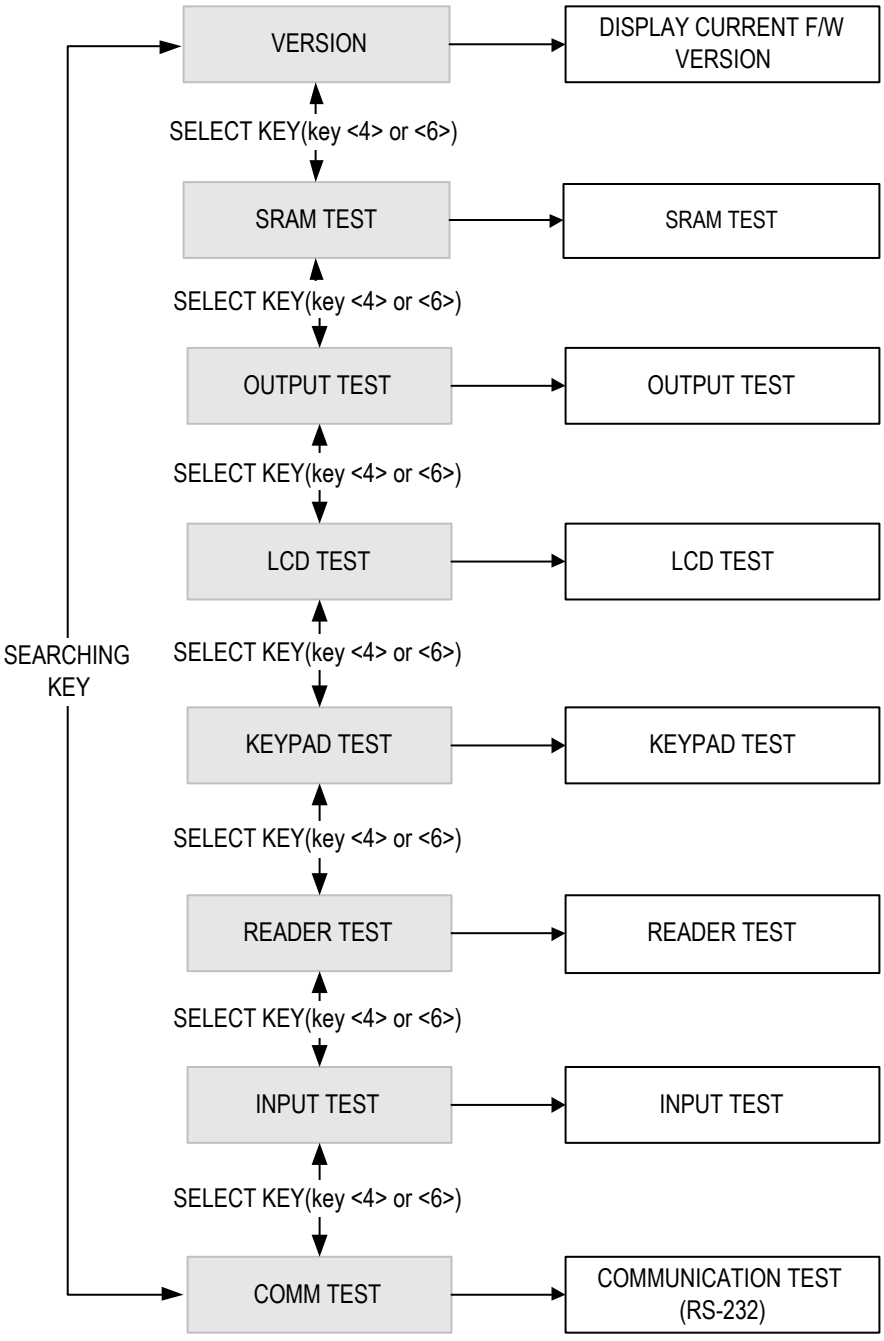
REGISTERED ID XXXXX	This menu displays the total number of registered IDs count.

14.3.5 Setting Possible Registration ID Count



ID COUNT 500	You should choose which possible registration ID count is to be applied. The default count is “500”(up to 7,250 events can be stored off-line.). If necessary, press <ENT> key.
ENTER ID COUNT [_ _ _ _ _]	This figure appears When you press the <ENT>key(and event memory is empty or not used). You are to enter a new upper limit of ID registration which must be a multiple of 500.
EVENT MEMORY NOT EMPTY !!!	You'll see this message when the event memory have been used and it's not empty. You can try again after uploading the data to the host or deleting them, using the setup mode F1(14.1.7 event clear).
ID TOTAL COUNT Wrong !!!	This message will show when the entered number is less than the total number of the registered IDs. If you want to delete some of the IDs and reduce the possible registration ID count, clear the ID memory, using the setup mode F1 first and try again from the beginning.

14.4 Setup Menu F4



Note: On setup menu F4, there are self-diagnosis functions to test the performances of the STAR 505R. To test, press <ENT> key.

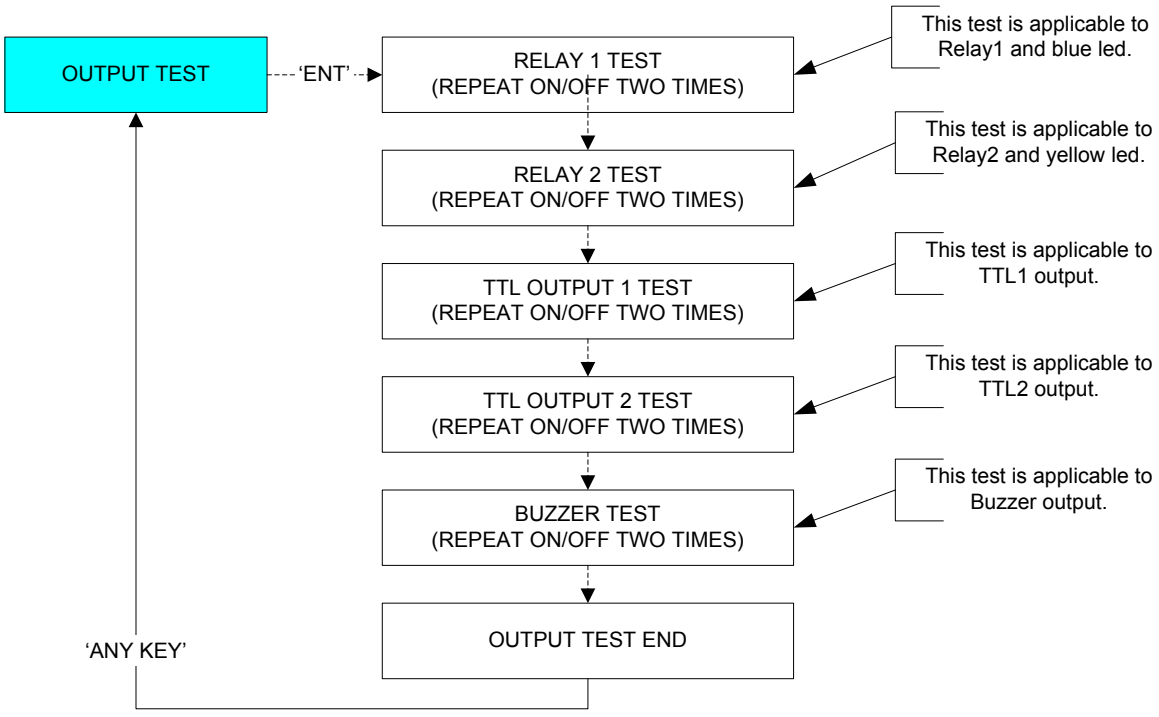
14.4.1 VERSION

VERSION F/W : Rev. 3.5	The version of the controller's firmware is displayed on the LCD. Press <4> or <6> key to look for other menus of setup menu F4.

14.4.2 SRAM TEST

SRAM TEST	To test the memory, press <ENT> key.
Memory fail !!! 0 RAM testing...	This message would indicate the SRAM has problems. In this event, contact technical support. Press any key to return to the setup menu. Use <4> key and <6> key for testing other performances.
RAM test pass ! ! ! Press any key . . .	This message appears when the SRAM is operating normally. Press any key to return to the setup menu. Use <4> key and <6> key for testing other performances.

14.4.3 Outputs TEST


OUTPUT TEST
'ENT'
RELAY 1 TEST
(REPEAT ON/OFF TWO TIMES)
This test is applicable to Relay1 and blue led.
RELAY 2 TEST
(REPEAT ON/OFF TWO TIMES)
This test is applicable to Relay2 and yellow led.
TTL OUTPUT 1 TEST
(REPEAT ON/OFF TWO TIMES)
This test is applicable to TTL1 output.
TTL OUTPUT 2 TEST
(REPEAT ON/OFF TWO TIMES)
This test is applicable to TTL2 output.
BUZZER TEST
(REPEAT ON/OFF TWO TIMES)
This test is applicable to Buzzer output.
OUTPUT TEST END
'ANY KEY'

OUTPUT TEST	To test the output performances, press <ENT> key. If the output performance has no problems, the test will proceed as follows: **First**, the green LED blinks twice as the relay is being shorted and opened twice. The relay makes a clicking sound as it runs. **Second**, the yellow LED blinks twice as the relay is being shorted and opened twice. The relay makes a clicking sound as it works. **Third**, the LCD changes its figure, 'ON, OFF, ON, OFF'. **Fourth**, the buzzer beeps twice. **Note:** The LCD provides no message to indicate if the test has finished successfully.
OUTPUT 5 Press any key . . .	This figure means that the test has finished. Press any key to return to the setup menu. Use <4> or <6> key to scroll to perform other tests.

14.4.4 LCD TEST

LCD TEST	To test the performance of the LCD, press <ENT> key. As the test proceeds several characters will move quickly from right to left.
Last Update Press any key . . .	This means the test has finished. Press any key to return to the setup menu. Use <4> key and <6> key for testing other performances.

14.4.5 Keypad TEST

KEYPAD TEST	To test the performance of the keypad, press <ENT> key.
0123456789ABCDEF	When operating normally, pressing the keys on the keypad will display the corresponding letter on the LCD. **Note**: For function keys, the letters A, B, C, D, E and F will refer to the <F1>, <F2>, <F3>, <F4>, <ESC> and <ENT>key, respectively.

14.4.6 Readers TEST

READER TEST	To test the performance of the reader, press <ENT> key.

Scanning . . .	The reader is waiting for an RF card to read. Present an RF card to the reader.
Reader 1 00312345 Reader No. Card No.	The test has completed successfully if the LCD displays the ID card number (example shown to left).

14.4.7 Input TEST

INPUT TEST	To test the performance of input ports , press <ENT> key.
INPUT TEST 11111 INPUT 1	The lower line on the LCD indicates the status of the five input signals. **Note**: 1. Input 1~4 : '0'=ON , '1'=OFF 2. Input 5 : '0'=OFF, '1'=ON

14.4.8 Communication TEST

COMM TEST	Before this communication test, connect the RS-232 Rx, Tx wires to each other. And to begin the test, press <ENT> key.
TX data = 0 COMM fail	This message indicates there is a problem with the communication performance. Check connections and try again. Press any key to return to the setup menu.
COMM test pass ! ! Press any key . . .	As the test proceeds, you can see the characters being transmitted and received. This message indicates that the communication test has succeeded.

15. Operating status indications

Granted Access	: Displayed when an access is granted.
UNREGISTERED CARD	: Displayed when an unregistered card(or PIN) is presented to the unit.
SCHEDULE ERROR	: Displayed when a Time Schedule error occurs.
APB ERROR	: Displayed when an anti-pass back error occurs.
PASSWORD ERROR	: Displayed when an invalid password is entered.
ACCESS DOOR ERR	: Displayed when a registered card(or PIN) that is supposed to access the other reader is presented to the reader. This may occur if 1 or 2 is entered for the RD value when the card was being registered.

16. FCC Registration Information

FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

NOTE: This device complies with **Part 15 of the FCC Rules**.

Operation is subject to the following two conditions;
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a **Class A Digital Device**, pursuant to **Part 15 of the FCC Rules**. These limits are designed to this equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

17. Warranty and Service

STAR 505R warranty is 2 years from the shipped date; returns must have an RMA (Return Material Authorization) number. The customer is to provide a description of the specific problem. The customer is to include serial numbers, formats, and model numbers with the items to be returned.

Contact Technical Support

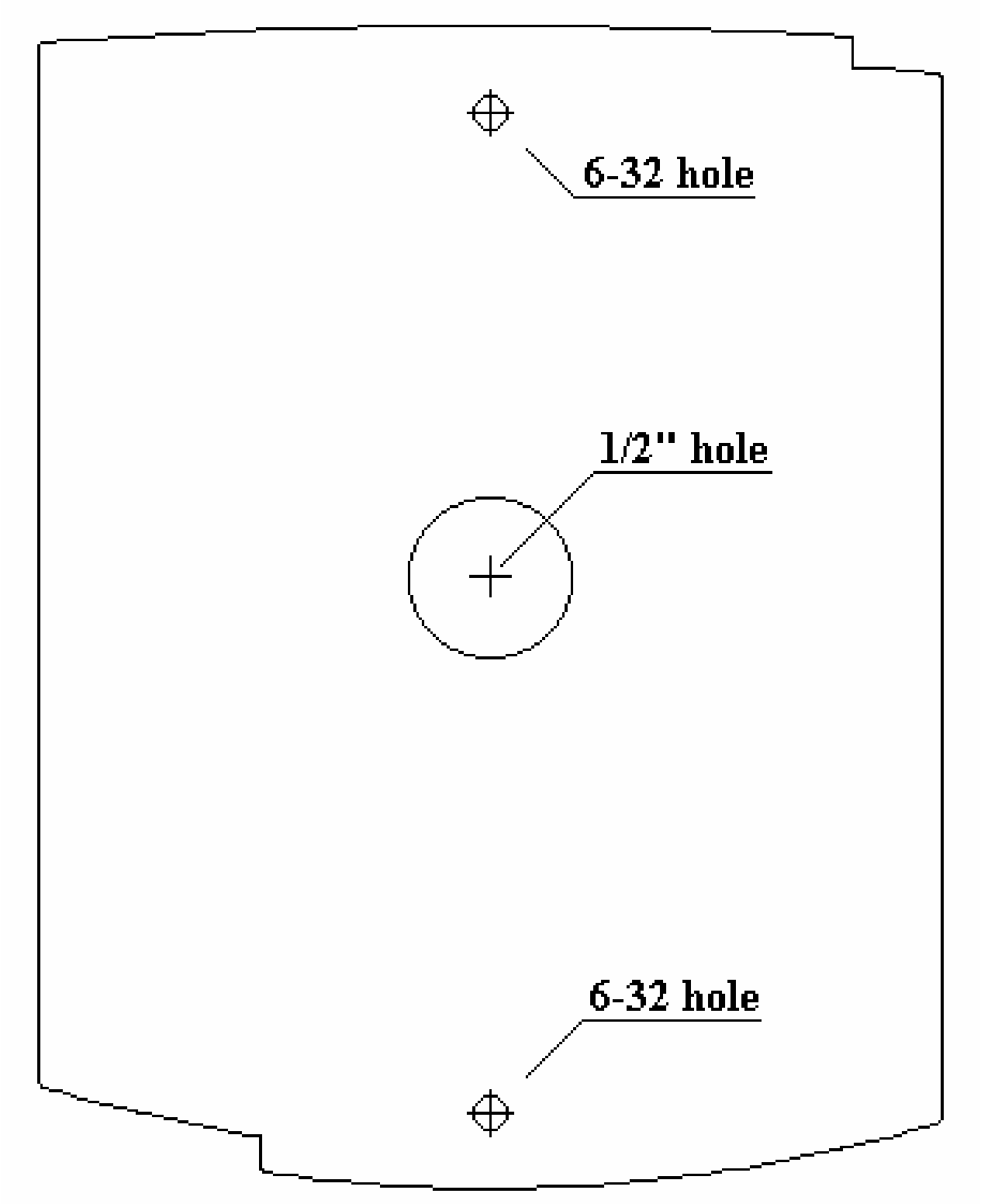
In the United states
RF LOGICS Inc. Service Center
3026 Scott Blvd.,
SANTA CLARA, CA95054
Tel.: (408)980-0001
Fax.: (408)980-8060
E-mail: rflogics@rflogics.com
Web-site: www.rflogics.com

Outside of the United states
ID TECK CO., LTD. Service Center
5F Ace Techno Tower Bldg.,
684-1 Deungchon-dong, Kangsuh-gu,
SEOUL 157-030, KOREA
Tel. : +82(2) 659-0055
Fax.: +82(2) 659-0086
E-mail: webmaster@idteck.com
Web-site: www.idteck.com

Note: Damage occurring during shipment is deemed the responsibility of the carrier, and claims should be made directly to the carrier.

MEMO

18. TEMPLATE



ID TECK Co. Ltd.